NATIONAL PETROLEUM NEWS

Lure of Petroleum Calls Industry To Land Nature Spurns

Street scene in the inland oil town of Wink, Texas, showing the Miller (tin) hotel in center. Sign on road from Pyote to Wink, Texas, advertising that the Miller hotel has "No Wild Women". Let this signboard disillusion you about "Commercialized Booze." Another sign says the Miller hotel has "undergone a metamorphosis"

HOUSTON, Aug. 10

THERE IS OIL THERE!

IN THAT Land of Screaming Silences where all the disagreeable extremes under High Heaven have been painted on a drab brown canvas with a brush dipped in venom and by an artist with a cosmic grouch—*there is oil.*

That explains tersely why millions upon millions of dollars have been poured into the development of the Permian salt basin region of west Texas and southeastern New Mexico.

It explains also why still other millions have been invested in great transportation systems to move the oil produced there to plants away from the region, there to be refined for useful purposes and consumed throughout the nation.

Again, it explains the toil and sweat of human endeavor through which is being wrenched from the bowels of a fetid land the prized fluid that turns the wheels of commerce and provides power for the pleasure bound.

Thus, in the course of industrial events, it becomes time for the writer to record his observations on another of his periodical trips into the moribund and salt-incrusted fastnesses of this region.

The peak of the country's innate cussedness is reached in mid-summer. Small wonder, then, that the sulfur oil produced in such a region should smell so vile.

Rattlesnakes and gila monsters; salt lakes and gyp waters; sand and dust now, or mud after the occasional rains that regional history records; snow or sunstroke, according to the season.

Dumb cows and dumber cowboys; cyclones and stifling, breezeless heat;

By Paul Wagner

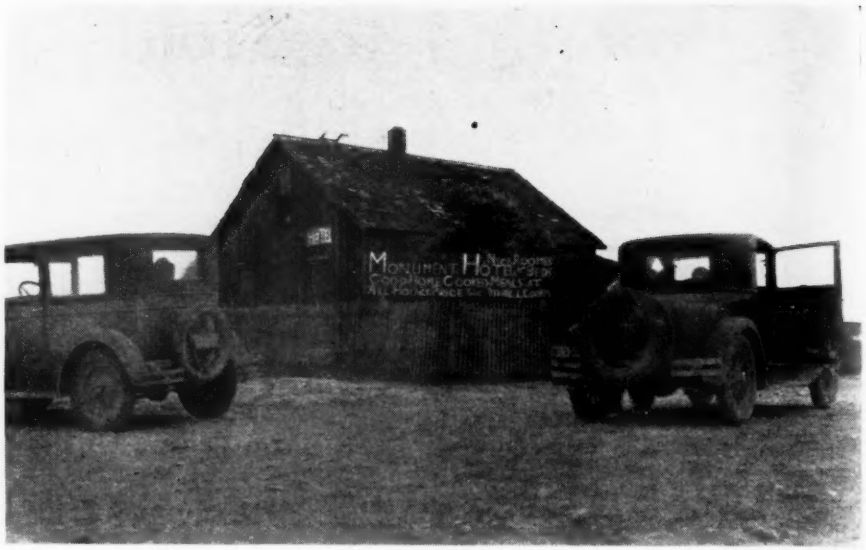
N. P. N. STAFF WRITER

Article 1

Deep ruts in the sand mark this principal "highway" north of the Winkler county, Texas, oil field into Lea county, New Mexico

horned toads and scorpions; mesquite and multiform cacti; flat tires and dead horses. No roads and little need for them, until the coming of the oil man; cloudbursts and dry sand-choked creek beds; caliche and barbed-wire fences; sheep and them as are beholden to them. Dry farmers and a few drier farms; windmills and dustry corrals; buzzards and jack-rabbits; prairie dogs and hoot owls; endless vistas and scorching miles; marrow-freezing "northers" in winter and brain-numbing heat in summer.

In such a land is being developed one of the two greatest petroleum reserves known to the American industry. The other is the Gulf Coastal salt dome region of Texas and Louisiana, with its vast deposits held against future needs—but that is another story.



Hotel at Monument, Lea county, New Mexico, typical of the old days before oil worked a transformation in the Permian salt basin region

WITHAL its isolation and the hardships inherent in such a country, the salt basin region gets under one's skin. The urge comes to return even as I write of its hardships, although only 10 days ago I quitted its borders after two weeks of steady traveling.

The morning mail brings a letter from an individual in whose company I several times visited the actual and prospective oil producing territory of this vast domain.

Grim humor, he calls this urge I now feel and the hankering he says he experiences at least once a week, sometimes oftener; "to gun the old crackle-hack over that country from San Angelo to McCamey, up through Crane county to Odessa, Monahans, Pyote, Wink, then over to Jal, Monument and Nadine, New Mexico, before turning back to Midland via Seminole, Shafter's Lake and Andrews."

Explain that, he suggests, "and you will be entitled to the appellation of 'Mr. Wagner, the eminent psycho-analyst.'" Not being able to do so, yet recognizing the symptoms he mentions, I shall have to remain in involuntary obscurity.

It is simpler, however, to solve the salt basin's attraction for the operating oil company. One does not have to search mental recesses, but may find the answer in production figures.

Seven principal areas of development in the region had produced 134,146,966 barrels of crude petroleum prior to July 1, 1928, from a total of 1366 wells then yielding 306,271 barrels combined daily average.

Two fields with 427 wells to their credit—those of Winkler and Pecos counties—were then pinched to 209,557 barrels combined daily average as against rated open flow maximum estimates based on hourly gages for prorating purposes that credited them with possibilities of 3,817,395 barrels daily.[1]

That these figures are valuable only in their application to prorating principles does not relieve the fact that the actual potential, were it accurately measurable, must be necessarily far greater than the American petroleum industry has ever known in the past.

The figures cited in the foregoing paragraphs refer only to the seven sulfur crude areas of the region that had individually produced a minimum of a million barrels of oil prior to July 1. Five additional areas classified as 1-well and 2-well fields, or other pools yielding "sweet" crude at levels shallower than the lime pay horizons, were not included in the foregoing totals. Their combined yields will bring total west Texas production above the 136,000,000 barrels mark to date.

THAT not 10 per cent of the salt basin's ultimate recovery has been taken out of the ground as yet is estimated by the student of sub-surface conditions indicated by development. The country remains virtually unscratched, it becomes apparent when one considers that the salt basin region extends 500 miles from east to west and 600 miles from north to south, embracing 56 counties in west Texas plus two or three in New Mexico.

Throughout almost the entire area the comforts of civilization are confined to the mushroom towns built up adjacent to oil development or to such border-line cities as Midland and San Angelo, Texas, on the east, and Carlsbad and Roswell, New Mexico, on the west.

How oil development has brought an amazing number of comforts and civic blessings to these communities will be told in a future article of this series. Away from them a scant half dozen miles, however, dangers to both cars and occupants still lurk in the shifting sand dunes and caliche beds that mantle a barren surface.

Unless one is used to such country as this—where petroleum seems somehow to accumulate in greatest quantities—it doesn't take long to paraphrase that old quip about Nature into the newer phrase:

"Ain't Pavement Grand."

(To Be Continued)

TABLOID PRODUCTION RECORD, WEST TEXAS SULFUR CRUDE AREA, TO JULY 1, 1928.

County	Gravity of oil	Per cent Sulfur	Number wells July 21, '28	Daily Avg. Production, July 21, '28 Barrels	Cumulative Production, July 21, '28 Barrels
Crane	31-35	2.50	272	53,510	36,862,983
Crockett	28	0.59	38	2,305	1,257,892
Ector	35	1.21	2	8	.....
Howard	31-35	1.00	162	5,390*	2,013,301
Loving	40	.....	4	115	.....
Mitchell	25-29	2.68	141	3,025	5,380,424
Pecos	30	2.00	233	70,020*	14,472,134
Reagan	38	0.75	221	20,400	33,672,380
Upton	20-25	1.90	285	11,540	11,315,068
Winkler	30	1.50	275	182,505*	31,422,622
Scurry	(Similar to Mitchell)		5	35	.....
Fisher-Jones	38-40	Sweet	34	4,115	1,000,000+

*Pinched production.

1—NATIONAL PETROLEUM NEWS, page 47, July 11, 1928.

Prorating to Hold West Texas To 375,000 Barrels

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Aug. 9

PRORATING machinery soon to be effective in three fields, plus natural declines in settled or semi-settled areas, will limit production of the West Texas sulfur crude region to 375,000 barrels, daily maximum, for the rest of 1928.

Issuance of a prorating order for the Roberts-Settles deep lime area of Howard and Glasscock counties, effective Aug. 15, permits exploiting previously shutin wells as quickly as market outlets are provided.

Allowable production in the Howard-Glasscock area was fixed at 15,000 barrels daily for the first month, or 25,000 barrels daily thereafter, the higher maximum to be justified by showings before the Railroad Commission of Texas, which administers the state's conservation laws.

Prorating measures long in effect elsewhere in West Texas limit the Yates field, Pecos county, to 65,000 barrels, daily maximum, and Winkler county to 175,000 barrels, daily maximum.

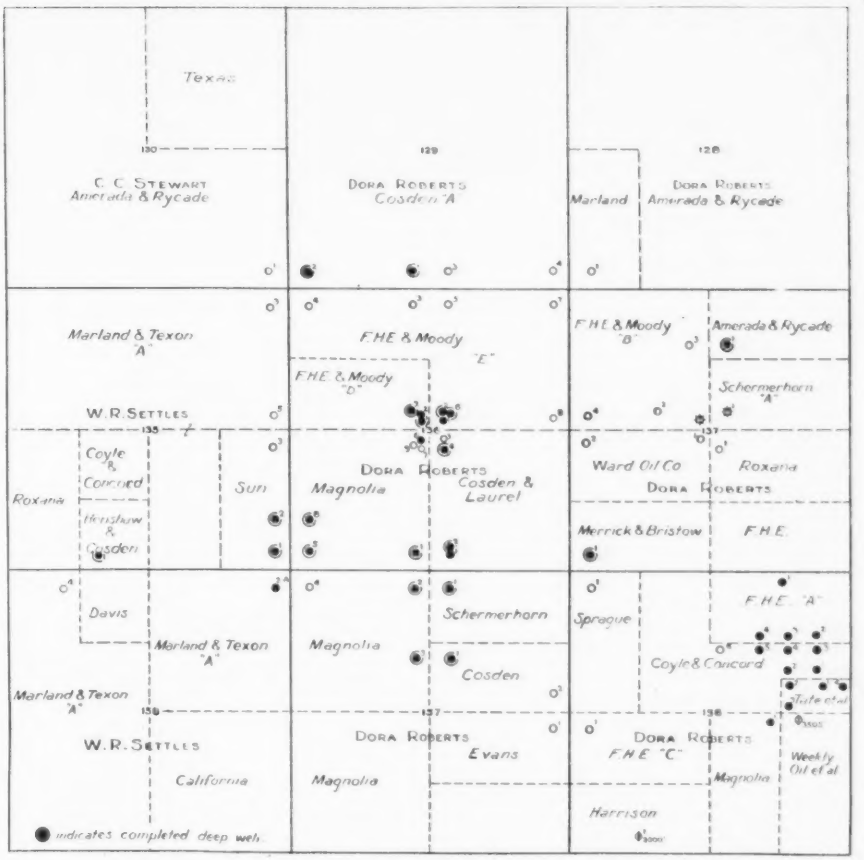
Present daily production averages about 96,500 barrels in settled or semi-settled sulfur crude fields where prorating measures were not found necessary. Declines in such areas, plus the possible failure of the Howard-Glasscock territory to find immediate market outlets for all its allowable production, may hold the West Texas total yield to about 350,000 barrels daily for a while longer.

Later in the year, the completion of refinery outlets at Big Spring for Howard-Glasscock crude will insure a market for the maximum production fixed in the prorating order. Then, the entire sulfur crude region should be producing about 360,000 barrels daily.

The maximum of 375,000 barrels daily mentioned earlier allows for a possible—but improbable—increase in daily averages through fresh developments in wildcat areas that are not indicated to be immediately threatening.

Official gages have not yet been taken for prorating purposes in the Howard-Glasscock area. About 20 deep lime wells of the territory were estimated, however, to be capable of at least 40,000 barrels maximum daily production.

Yates field potential production for the prorating period of Aug. 1-15, inclusive, was set up at 2,997,252 barrels in the official report of the umpire. Winkler county total potential for a similar period was rated at 1,808,076 barrels daily.



Showing the relation of Roberts-Settles deep lime wells to shallow Chalk field production in Howard and Glasscock counties, Texas

PECOS and Winkler counties, together had rated potential production of 4,805,328 barrels to their credit. Allowing 40,000 barrels potential for the Howard-Glasscock deep lime area and adding in the 96,500 barrels actual production of settled or semi-settled territory, the West Texas sulfur crude region reached to the enormous daily rating of 4,941,828 barrels potential, for prorating purposes.

As frequently pointed out in these columns, such potential producing ratings are patently artificial. They are made in the Yates and Winkler fields on the basis of one-hour gages of individual wells, the short period flow being multiplied by 24 to reach a daily open flow production estimate.

When used solely for establishing ratios of producing well values in the prorating yardsticks the short period gages have been found satisfactory. These figures should not be considered as representing what the prorated fields could actually produce were wells exploited at open flow maximums.

Directly interested branches of the petroleum industry in West Texas never contemplated use of such figures for anything more than their part in the prorating yardsticks of the respective fields. That the figures should be used as a measure of possible banked-up open flow production was, however, inevitable. There was no other measure of the

region's producing capabilities to be used.

All operators know that flush wells scattered over wide areas and backed up by a natural water drive will make test showings that would not stand up—even for 24 hours—were field pressures distributed and dissipated by open flow producing practices. Operators attempted, therefore, to discount total potential ratings to get some idea—roughly, of course—of what the region actually could produce if flowed wide open.

At a time when rated potentials were approximately half of what they are now it was estimated by many qualified engineers that the Yates and Winkler fields could produce, on open flow, perhaps 60 per cent of the totals indicated by test gages.

Declines would have been rapid and ultimate yields would have been cut down alarmingly. Still, it was felt, that, for a few days, actual production would have been 60 per cent of the rated potential.

The more wells completed, the greater the problem of reaching figures representing true potentials to determine quantities of oil in reserve. Perhaps now the region could produce only 30 per cent of its rated potential, or even only 20 per cent.

On the last mentioned basis, which most persons will agree is conservative, West Texas would have an exploitable potential of approximately 1,000,000 barrels daily, or roughly three times the quantity of crude now moving to market.

If the reader isn't satisfied with these figures then he'll have to make his own. He can tie-in the rated potentials of the various fields discussed with the following actual production and calculate to his heart's content:

	Producing wells, 8-4-28	Barrels Daily, 8-4-28
Counties		
Winkler	275	172,645
Pecos	233	64,621
Howard	162	5,510*
Crane	272	53,065
Crockett	43	2,960
Ector	2	10
Loving	4	140
Mitchell	141	3,025
Reagan	221	17,645
Upton	285	11,370

*Shallow sand wells not affected by prorating order; all deep lime wells shut in prior to Aug. 13, 1928.

Howard-Glasscock county well pressures are in no way comparable with those found in the Pecos and Winkler areas. Many of the Howard-Glasscock county completions have to be swabbed into production, but they make good wells thereafter.

Under the field rules laid now in the West Texas prorated areas, shooting of wells and swabbing practice is generally prohibited, except that, in the Howard-Glasscock county territory, swabbing is permitted for starting the flow, testing and cleaning out.

Record of Deep Lime Wells Drilled In Howard and Glasscock Counties, Texas

Company-Well	Sec.	Depth of Pay	Initial Production (bbls.)	Comment
Henshaw & Cosden				
Settles 1	135	2208-2210	60 (hour)	32.6 Grav.
Sun Oil Co.				
Settles 1	135	2490-2540	100 (hour)	
Settles 2	135	2967-2982	72 (hour)	
Cosden & Co., Inc.				
Roberts "A" 1	129	3083-3104	Swabbed 1000 bbls. in 24 hours.	
Roberts "A" 2	129	3088-3105	2500 feet oil in hole.	
Roberts 1	157	2980-3019	1800	(Was Lockhart Bros.)
Cosden & Laurel Oil & Gas Co. (Was Owen & Sloan)				
Roberts 2	136	2955-3005	3750	
Roberts 4	136	2450-2547		Deepening
Magnolia Petroleum Co.				
Roberts 1	136	2956-2980	3300	Deep discovery
Roberts 2	157	2974-2986	3000	
Roberts 3	157	2987-3030	2400	
Roberts 5	136	2515-2550	80	
Roberts 8	136	2540-2559	41 (hour)	Swabbing test
Schermerhorn Oil Co.				
Roberts 1	157	2983-3000	1500 (9 hours)	
Merrick & Bristow				
Roberts 1	137	2951-3003	1500	
F. H. E. Oil Co., & Moody Oil Corp.				
Roberts "D" 1	136	2950-3003	3300	
Roberts "D" 3	136		800	
Roberts "E" 2	136	2497-2727	550	
Roberts "E" 6	136	2946-3000	2400	
Amerada & Rycade Companies				
Roberts 1	137	2490-2505	50 (hour)	

With the exception of the Magnolia Petroleum Co., which drilled the first important well in the Roberts-Settles field, the Howard-Glasscock deep lime area is operated by smaller but, nevertheless stable, companies.

A considerable proved and semi-proved acreage in the field has been acquired by purchase by Cosden & Co., Inc., recently formed by J. S. Cosden to consolidate Texas producing properties and to build a refinery on the Texas & Pacific railroad, east of Big Spring, 18 miles from the Roberts-Settles field.

The Cosden refinery site consists of 680 acres made up of the north 244 acres of sec. 47 and the south 436 acres of sec. 38, block 32, township 1 north, in the T. & P. survey, Howard county. Contracts were recently awarded the Graver Corp., and the Foster-Wheeler Corp., for construction work. Total refinery capacity will be 20,000 barrels, skimming, and 8000 barrels, cracking.

A plant of the W. D. Richardson interests is also proposed for the Big Spring area. It is said it will have about 5000 barrels capacity.

Still another plant is that to be built by Groff & Peterson, as the Big Spring Refining Co., which will have skimming capacity of 2500 barrels daily. These interests plan to lay a 4-inch pipeline to the field to run crude contracted with Merrick & Bristow.

Shell Pipeline Corp., whose McCamey-to-Healdton trunk passes within a few miles of the field, will build a spur to the Roberts-Settles area and plans running about 6000 barrels of crude daily. Magnolia Petroleum Co., which is already connected with shallow sand wells in the area, is also expected to provide some facilities for deep lime oil.

An accompanying table gives detailed records of deep lime completions, which may be checked against the map published herewith. Shallow sand production, known as the Chalk field, extends east and northeast from the deep lime area several miles. The shallow and deep areas overlap to some extent in the area shown on the map.

Weighted Average Prices Oklahoma Market

On Feb. 6, 1928, National Petroleum News adopted the policy of publishing weighted average prices on the four more important gasolines in Oklahoma, instead of a range in prices. These weighted averages together with the number of cars of each grade sold, as of Monday, Aug. 13, are published below. The figures are not available for publication in the refinery market table on page 104 of this issue.

	Total Cars	Weighted Average
58-60 U. S. Motor, 437 e. p.	102	9.6850
60-62, 437 e. p.	18	9.9861
60-62, 400 e. p.	14	10.3571
64-66, 375 e. p.	3	10.8333

Note: Above prices are in cents per gallon, f.o.b. Oklahoma refinery in tank car lots.

LOS ANGELES, Aug. 11.—Earl Williams, representative of A. Leschens & Sons Rope Co., St. Louis, is in California making headquarters at the Los Angeles office of Oil Well Supply Co.

'Heat With Oil' Campaign To be Headed By Petroleum Institute Executive

NEW YORK, Aug. 10

MORE active interest on the part of oil companies in the development of the fuel oil market through heating homes with oil is expected to follow the announcement that Trell W. Yocum, of the executive staff of the American Petroleum Institute, is to become managing director of the Oil Heating Institute and American Oil Burner Association, effective Oct. 1.

He succeeds Leod D. Becker, who has been head of these two associations since their organization, and now retires to give all his time to his publishing interests.

Mr. Yocum was first secretary and later director of the Committee of Public Relations of the institute, which position he now holds. Before coming with the institute he was managing editor of Collier's magazine.

The American Oil Burner Association is the organization of burner manufacturers. At the 1927 spring meeting of this organization, the Oil Heating Institute was organized to carry on an active publicity campaign to acquaint the public with the advantages of heating by oil. Oil companies supplying oil as fuel have become members of the institute, as well as companies manufacturing the burners.

Trell W. Yocum, Director of Public Relations, of American Petroleum Institute, who, Oct. 1, becomes managing director of Oil Heating Institute and American Oil Burner Association. Photos by Blank & Staller, N. Y.

That the publicity program of the Oil Heating Institute for 1928 be supported by the oil industry and that the oil industry support this program to the extent of maximum contributions of $175,000 for 1928 was endorsed by the executive committee of the American Petroleum Institute late in May.

This action followed the report of a special committee appointed at the last petroleum institute meeting in Chicago last December to investigate the campaign of the heating institute and the possibility of furtherance by the oil industry of home heating as a means of developing its fuel oil market.

This committee consisted of Herbert L. Pratt, president of the Standard Oil Co. of New York, chairman; J. Howard Pew, president Sun Oil Co., Philadelphia; and W. M. Irish, president, Atlantic Refining Co., Philadelphia.

American Petroleum Institute directors also endorsed the suggestion of Mr. Pratt's committee that the president of the institute appoint three of its members to serve as members of the board of counselors of the Oil Heating Institute.

E. B. Reeser, president, Barnsdall Corp., Tulsa; W. M. Irish, president, Atlantic Refining Co., Philadelphia; and G. R. Nutty, vice-president, Gulf Refining Co., Pittsburgh, were later appointed as the three oil industry representatives.

In urging the oil industry to support the Oil Heating Institute campaign, the special institute committee said the heating institute planned to spend $350,000 in 1928 in publicity for heating homes with oil.

The committee said it had set a mark of 150,000 additional burners to be installed in this country in 1928. Previous estimates placed the number of new burners installed in 1927 at 100,000 and the total of domestic and commercial burner installations at the close of 1926 at around 600,000.

In 1927 the Oil Heating Institute expended $195,000 for publicity, to which six oil companies contributed $45,000. This publicity consisted of (1) newspaper and magazine publicity or reading articles; (2) general magazine and trade paper advertising; (3) direct mail follow-up of magazine advertising and material to influencing groups, such as architects, speculative builders and so on.

In urging the support of the Oil Heating Institute campaign, the petroleum institute committee urged that oil companies generally contribute, whether or not at present engaged in sale of fuel oil for commercial or domestic heating. Resulting improvement in the fuel oil market would benefit all branches of the oil industry, it was pointed out.

"In view of the continually increasing productive capacity of the oil industry, the urgent need for developing new uses and new markets for petroleum and its products has become apparent," the committee report continued.

"Fuel oil is in greatest oversupply. Heating of dwellings and commercial buildings with oil appears to offer the best opportunity for immediate and rapid market expansion. If superior use be an element of a sound conservation program, the use of fuel oils and distillates for so-called domestic heating is not antagonistic to sound conservation.

"The modern domestic oil burner gives a kind of household heating service which gas alone has supplied in the past; and in the country as a whole it gives that service cheaper.

"It is our belief that oil heating will not only supplant gas, which is at present its sole competitor, but, like the gasoline automobile, establish a new standard of American home life and fix a level of comfort and convenience never before attained by any civilization, and at a price below its economic value."

Rail Shipments of Winkler Crude Holding Up

Staff Special

HOUSTON, Aug. 11

TANK car shipments of Winkler crude, which constitute the only important quantities of sulfur oils moving out of West Texas in railroad traffic, maintained the high daily average of 61,715 barrels in July.

Largest loadings were made by the Southern Crude Oil Purchasing Co., subsidiary of Pan American Petroleum & Transport Co., which is stock controlled by Standard Oil Co. of Indiana. It shipped 11,789 barrels to the associated Mexican Petroleum Corp., of the Pan American group, and to the Sugar Creek, Whiting and Wood River refineries of the Standard of Indiana. Loadings included 5484 barrels daily to other purchasers, mainly in the New Orleans district.

American Petroleum Co., of the American Republics group (J. S. Cullinan interests of Houston), was second. It handled 17,034 barrels daily of crude produced by the affiliated Republic Production Co., and other oil purchased from Winkler operators.

Loadings of the six companies making tank car shipments averaged, daily, follow:

Company	Barrels
Southern Crude Oil Purchasing Co.	17,273
American Petroleum Co.	17,034
Shell Pipeline Corp.	9,748
Independent Oil & Gas Co.	6,593
The Texas Co.	6,260
Skelly Oil Co.	4,807
Total	61,715

Shipments are mainly to companies of affiliated groups or to holders of contracts in the Shreveport and New Orleans districts. A few small refineries in Texas, and elsewhere, also get part of their crude supplies from this source. In the aggregate, however, the last mentioned quantities of crude are negligible.

When the Shell Pipeline Corp. put its McCamey-to-Healdton trunk system in operation last June it cut down materially on tank car shipments of West Texas crude to the affiliated Roxana Petroleum Corp., at Wood River and Mid-Continent destinations. It still averaged 4199 barrels daily, however, of Winkler crude shipments in tank cars to Wood River in July, pending the looping of its gathering facilities between the Winkler area and McCamey.

Shell's other tank car shipments were to destinations the company cannot serve by pipeline. It shipped 5534 barrels of Winkler crude daily to itself at Texas City, for tankship loadings, and an average of 15 barrels daily to Marland Refining Co., at Ponca City.

The Texas Co.'s Winkler shipments were confined to loadings against contracts made last winter by the Landreth Production Co., whose properties it acquired by purchase recently. It shipped 5565 barrels daily to the New Orleans Refining Co., Destrehan; 174 barrels daily to Louisiana Oil Refining Corp., Shreveport; and 521 barrels daily to Crystal Oil & Refining Co., Shreveport.

Skelly Oil Co. shipped 1358 barrels daily to its refinery at El Dorado, Kan.; 3380 barrels daily to Crystal Oil & Refining Co., Shreveport; and 69 barrels daily to the Golden Rule Refining Co., Wichita.

Independent Oil & Gas Co.'s shipments were confined to 6593 barrels daily to New Orleans Refining Co., Destrehan.

Detailed shipments of Southern Crude Oil Purchasing Co. were as follows: Standard of Indiana at Whiting, 3959 barrels daily; at Sugar Creek, 1724 barrels daily; at Wood River, 1850 barrels daily; Mexican Petroleum Corp., Destrehan, 394 barrels daily; at Galveston, 3862 barrels daily; Chalmette Petroleum Corp., New Orleans, 3187 barrels daily; Liberty Oil Co., Ltd., New Orleans, 1478 barrels daily; Star Refining & Producing Co., Fort Worth, 508 barrels daily; Sweetwater Refining Co., Sweetwater, 311 barrels daily.

American Petroleum Co.'s detailed shipments averaged as follows: American, at Houston, 4861 barrels daily; Rio Grande Refining Co., El Paso, 2391 barrels daily; Louisiana Oil Refining Corp., Shreveport, 9776 barrels daily; Cooper Petroleum Co., Houston, 6 barrels daily.

The consolidation of figures by companies buying from several shippers shows total daily average loadings consigned to Louisiana Oil Refining Corp., of 9950 barrels daily; to New Orleans Refining Co., 12,158 barrels daily; to Crystal Oil & Refining Co., 3901 barrels daily; to Standard Oil Co. of Indiana, at three refineries, 7533 barrels daily; and Mexican Petroleum Corp., at two destinations, 4256 barrels daily.

Little River Output Mounts As Delayed Wells Drill In

(By Telegraph)

TULSA, Aug. 14

WITH 16 wells completed since drilling restrictions were lifted two days ago, Little River production has been increased about 2500 barrels per hour.

The morning of Aug. 11 the field gauged 43,238 barrels from 146 wells. Aug. 13, morning, showed over 100 per cent increase in output, 90,993 barrels from 159 wells.

Reports from the field show that completions are continuing to swell the production hourly although complete reports are not yet available. It is estimated that about 20 more wells will be completed before the lid is put back on the field August 15.

New producers so far are scattered over the area proven by the 10 cooperative test wells which were drilled in the south Little River extension earlier in the year.

The biggest well reported so far is the Gypsy Oil Co., No. 4 Hulhoke, in the southwest, southeast of 11-7-N-6E, which produced 6540 barrels the first 24 hours. The nearest approach to a failure so far is the Pure Oil Co., No. 4, Cotcha, in the northwest, southeast, northeast of Sec. 23-7N-6E, along the east edge of the pool, which found a little water after drilling six feet of Wilcox sand found at 4560 feet. After plugging back a little way the well flowed 555 barrels.

The No. 1 well, in the northeast of the same lease, topped the sand at 4295 feet and flowed 3679 barrels after drilling to 4304 feet. Other wells completed range in size from 100 barrels an hour upward.

The frenzy of operation rivals that seen in any field in recent years as all operators are striving to reach the sand in time to let the wells flow to capacity long enough to determine their possibilities and to give the wells a chance to clean themselves.

Umpire Ray Collins is in the field to see that the agreement is lived up to and that the restriction of 1600 barrels per day per 80 acres is applied at midnight August 14.

Laying Dust on Roadbeds is New Market For Heavy Fuel Oils

By Ward K. Halbert
N. P. N. STAFF WRITER

CHICAGO, Aug. 11

AMERICAN railroads make a practice of oiling their roadbeds to lay the dust. Experiments have been going on for several years and results have justified a continuation of the practice.

But the surface of this potential market for low grade fuel oils has not been scratched, in the opinion of refiners who have investigated it.

Main track owned by Class I roads of this country aggregated about 200,000 miles Dec. 31, 1927. That same date, according to government figures, refiners east of the Rocky Mountains had 32,000,000 barrels of fuel and gas oils on hand to carry over into 1928.

All this was not suitable for road oiling. About 75 per cent of it was too light in body and too high in price. But the remaining 25 per cent (about 8,000,000 barrels) ranged between 14 and 20 gravity—just the material a few roads used most successfully in oiling roadbed.

It takes about 37.5 barrels of oil to lay the dust on one mile of track, according to the experience of the railroads that have tried it. At that rate 8,000,000 barrels will cover all trackage of Class I roads once a year, and refiners estimate twice a year is really necessary.

George D. Locke, vice-president of Barnsdall Refining Co., Chicago, formerly a railroad president, has done more than any other oil man to start the development of this new market for oil.

The idea struck him one afternoon while en route from St. Louis to Tulsa on a Frisco train. He observed that, on one whole division south of St. Louis which had been oiled, no dust rose as the train passed and passengers could enjoy the open club car and observation platform.

As soon as he reached Tulsa, Mr. Locke started to look into the matter. First he wrote Frisco officials to learn the cost of oiling the roadbed and as much as possible about the equipment necessary. Later he interested presidents of 25 railroad companies in the United States through personal correspondence, and also interested other refiners.

George D. Locke, vice president of Barnsdall Refining Co., formerly a railroad executive, who is developing a new market for heavy fuel oils in oiling roadbeds

Some of the railroad presidents sent men to Chicago to talk with Mr. Locke. Others asked for more information as to costs and results. Several wrote they were already oiling their roadbed and told of results which, for the most part, were satisfactory. A few offered some objections.

Several of the railroads gave figures to Mr. Locke on their road oiling costs. These varied between $32.76 and $43.20 a mile, including the cost of the oil delivered and applying it. The variation in costs was due to fluctuation in oil prices and to the difference in the amount of time used in applying it.

Work train expense is a considerable item in the total cost. Labor organization rules require that every train going out on the road have a full crew, consisting of a locomotive

STATEMENT OF COST OF OILING ROADBED ON ONE SYSTEM

Division	Miles	Gallons	Gals. Per Mi.	Wages: Work Train	Wages: Other	Wages: Total	Misc. Work Trn. Expense	Cost of Oil	Total Expense	Cost per mile: Oil	Cost per mile: Total
Eastern	329.50	474,444	1440	$645.85	$205.87	$851.72	$394.28	$11,297.00	$12,543.00	$34.29	$38.07
Southern	530.30	648,876	1224	945.88	257.63	1203.51	718.95	15,449.74	17,372.20	29.13	32.76
River	28.50	42,077	1476	131.31	19.48	150.79	52.14	999.60	1,202.53	35.07	42.19
Northern	324.00	512,749	1583	722.55	578.78	1301.33	485.61	12,208.27	13,995.21	37.68	43.20
Western	276.80	434,211	1569	704.93	81.25	786.18	723.71	10,338.49	11,848.38	37.35	42.44
	1489.10	2,112,357	1419	3150.52	1143.01	$4293.53	$2374.69	$50,293.10	$56,961.32	$33.77	$38.25

engineer, fireman, conductor and two flagmen. Besides these the road oiling process requires the help of two laborers and a superintendent who is responsible for the oiling job. In some cases five laborers are used.

If a track is not much used, the work can be done when the schedule is lightest and the work train's operations may not be interrupted often. Where the train schedule is heavy the work train has to take the siding frequently. While the work train is on the siding most of the cost goes on but the work does not and that raises the cost per mile.

One 8000-gallon tank car of oil is sufficient to lay the dust on approximately 15 miles of track. Sometimes a car load is spread over 20 miles and sometimes concentrated on 10 miles, depending on the thickness of the coat which, in the mind of the superintendent, is necessary. Ordinarily the work train spreading oil runs about 15 miles an hour. Some roads have found oiling 40 miles of roadbed is a good day's work for a train, because of frequent stops.

Not one of the railroad presidents who corresponded with Mr. Locke suggested that $40 a mile was too much to spend for the essential comfort of their passengers. A great many railroads are oiling some part of their roadbeds this season. Some oil whole divisions at a time and others apply it only to grade crossings and stretches of track through towns. One road submitted a detailed table of costs to Mr. Locke which is published herewith. Executives of other railroads, having first hand experience, say the figures check closely with their own cost records.

Samuel M. Felton, chairman of the board of the Chicago Great Western added to his letter, somewhat facetiously, that he had been able to oil roadbed much cheaper than $43.20 a mile in Mexico a few years ago. Officials of the Wabash, Pennsylvania, C. B. & Q., and M. K. & T. told of satisfactory results in allaying dust with oil.

C. R. Gray, president of the Union Pacific, told how his company had seen fit to oil the entire roadbed of the line crossing the American desert, and besides had oiled the sides of sand dunes near the track to overcome the dust nuisance for their passengers.

Among the dozens of railroad officials interested, four suggested to Mr. Locke there were some objections to oiling roadbed. "Our passengers object more to a little oily dust than to a great deal of dry dust," one official wrote. Another suggested that "Oil has a tendency to hold water around the ties."

Mr. Locke is convinced all practical objections to the use of oil can be met successfully.

Uniform Field Tank Strapping Method is Sought

TULSA, August 11

A UNIFORM method of strapping field storage tanks is to result from the efforts of the American Petroleum Institute Special Committee on Tank Measurements and gage tables.

Copies of a tentative code have been sent out from the office of Carl A. Young, at Dallas. Mr. Young is chairman of the committee. Suggestions for the improvement of the code will be made by the industry as a whole and the completed system will be presented for approval at the next annual meeting of the institute.

The adaption of such a code will do away with much of the confusion which exists in this work at the present time. It is seldom that two companies strapping the same tank follow the same system or arrive at exactly the same conclusion. This is especially true of companies starting operations in a district new to them.

Recommended tolerances contained in the code, as it now stands are for a difference of 1/100 of a foot for each 40 feet or fraction thereof of circumference. However the committee has asked that these tolerances be carefully reviewed and checked with actual practice.

Besides Mr. Young, members of the institute special committee are: Ray F. Shumaker, Prairie Pipe Line Co., secretary; E. L. Andrews, northern group of pipe lines; Ira McFarland, The Texas Pipe Line Co.; Geo. H. Foster, Union Oil Co. of California; H. M. Stalcup, Skelly Oil Co.; Mr. Gidney, Gulf Oil Corp.; C. H. Jay, Pure Oil Co.; L. L. Langworthy, Midwest Refining Co.; Stuart Moser, Pasotex Pipe Line Co.; F. W. Shay, Standard Oil Co. of New Jersey, and W. A. Sniffen, Magnolia Pipe Line Co.

The tentative code was drawn up from a former code presented at the A. P. I. standardization meeting at Colorado Springs last June. The committee then agreed that it recommend to the special committee on the Standardization of Steel Tanks for Oil Storage, of which Ralph J. Reed, Union Oil Co. of California, is chairman, that they include in their specifications a stipulation requiring the tank manufacturers to stamp or emboss permanently the thickness of the plate used in the manufacture and erection of A. P. I. standard tanks.

As yet no agreement has been reached as to the location and number of circumference measurements. There are nearly as many methods of circumference measurement as there are oil producing districts, a fact which has led to much confusion.

No attempt will be made to standardize report forms, as the committee felt this to be a matter of company business. However, a standard gage table was discussed at the committee meeting and sample gage tables from various parts of the country were examined. A sub-committee was appointed to prepare a tentative standard form of gage table, a report on which will be made at the next meeting of the committee.

A sub-committee composed of Mr. Andrews as chairman and Messrs. Shumaker and Messimer is studying the matter of measuring tanks with floating roofs. As yet no recommended practice has been announced.

Inasmuch as comments and criticisms of the tentative A. P. I. code for measuring field production and storage tanks are invited from the industry as a whole, a sub-committee, with Mr. Shumaker as chairman, and R. J. Daniel, Stuart Moser, A. B. Smith and W. A. Sniffen as members, has been appointed to review and analyze all comments.

Coming Meetings

Illinois Petroleum Marketers Association, Soengataha Country Club, Galesburg, Ill., Aug. 16.

Ohio Petroleum Marketers Association, Commodore Perry Hotel, Toledo, O., Sept. 5, 6, 7.

Wisconsin Petroleum Association, Wausau Hotel, Wausau, Wis., Sept. 12.

National Petroleum Association, Hotel Traymore, Atlantic City, N. J., Sept. 19, 20, 21.

North American Gasoline Tax Conference, Peabody Hotel, Memphis, Tenn., Oct. 1, 2, 3.

National Safety Council, Petroleum Section, Hotel Pennsylvania, New York City, Oct. 1 to 5.

Big Four State Jobbers, Kansas City, Mo., Oct. 3, 4, 5.

American Oil Men's Association, Hotel Statler, Detroit, Mich., Oct. 9, 10, 11.

Wisconsin Petroleum Association, Green Room, Schroeder Hotel, Milwaukee, Oct. 17.

International Petroleum Exposition, Tulsa, Oct. 20 to 29.

Petroleum Refiners Division National Association of Credit Men, Chicago, Nov. 4, 5, 6.

Independent Oil Men of America, Stevens Hotel, Chicago, Nov. 19, 20 and 21.

American Petroleum Institute, Stevens Hotel, Chicago, Dec. 4, 5, 6.

Good Merchandising, Lighted by a Smile Drives the Wolf Away

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, Aug. 13

Keep smiling!
Satisfy the customers!

THESE two injunctions put into effect three years ago at a Cleveland suburban filling station have multiplied the business more than tenfold and replaced a dirty little shack, the graveyard of broken hopes, with a $10,000 station that houses a prosperous business.

This is primarily a story of how good merchandising drove away the wolves of adversity but before such things as gasoline and oil and service are discussed, we must tell about the personality that brought new light to a dark spot.

The personality is that of W. H. Strack, better known to hundreds of East Cleveland adults and children as "Bill" Strack, the man with the smile that never smirks. Bill's smile is sincere because he is pleased to be in the filling station business. He makes his customers feel pleased that they are his patrons. Even the suburb's grouch is his friend.

Strack is an old head in the oil business. He began his petroleum career as an industrial oil salesman. He knows lubrication. Then he became vice-president of the Union Oil Co. of Cleveland, a compounder of industrial lubricants and oils. He turned more and more to inside work until the fumes from cutting and core oils broke his health. He sought the open air again.

Bill bought two filling stations on the West Side of Cleveland but operated them only a short time when he had to go to a hospital. He sold the stations. Out of the hospital, he sought outdoor work. That was about three years ago. He cast about and picked up a station at Hayden Ave. and Eddy Rd., East Cleveland, a station which an oil friend described to him as a graveyard. There had been three failures at it in a year.

But Bill knew how to sell and he knew lubrication. He put in two grease pits and a wooden shack over them. The place was not very inviting but Bill's smile took away the curse of unattractive surroundings. He made friends with car owners of the neighborhood and soon his reputation was spreading. He was as pleasant to the boy who stopped in to inflate his bicycle tires as he was to the motorist who filled his gasoline tank, had his crankcase refilled and car greased.

W. H. (Bill) Strack, his face as brown as his shirt, engages in some repartee as he makes change for a customer. The smile is much in evidence

The gasoline gallonage and oiling and greasing business grew with his reputation. A majority of his customers are regular patrons.

He emphasized his lubrication business. He carefully explained to his customers the economy of it. He impressed on them that his service was thorough and he demanded of his employes that no bearing be left until it had been thoroughly greased, regardless of how tight it might be.

He slowly built that bulwark of all profitable greasing business—public confidence. Customers came longer distances for chassis lubrication. They also bought gasoline. When he took the station over three years ago it averaged 75 gallons of gasoline a day. The last year gasoline gallonage averaged between 750 and 800 gallons a day. Some days he sells as much as a barrel of motor oil. He has sold as high as 1680 gallons of gasoline in a day.

Bill watches the trend in merchandise. He noted that the gracefully lined and brightly colored automobiles forced Ford to abandon Model T. He noted the styles of architecture were becoming more artistic, and in everything art was making itself a factor. He decided the filling station should be attractive in appearance as well as a store where unquestionable goods were sold. His business had grown until he could afford to build a station in keeping with the trend toward beauty.

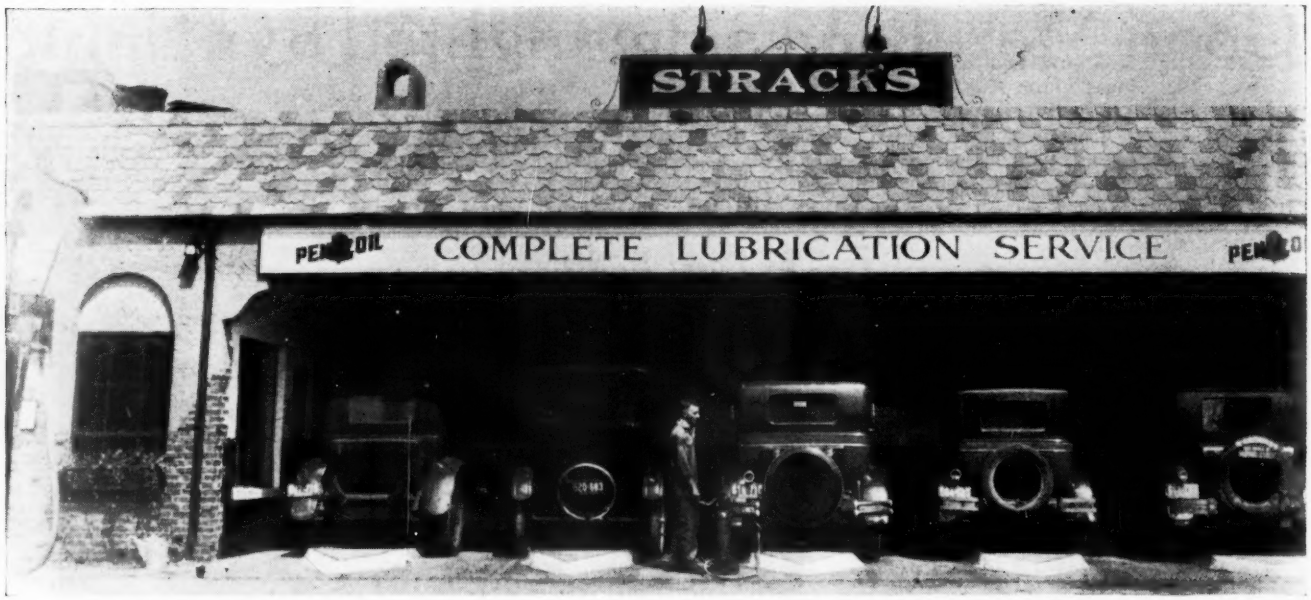
Bill's lot was triangular and not so large. Along one side was a large house priced too high to warrant purchasing for filling station purposes. On another side was a railroad on an earthen elevation. The third side, of course, was the street which curves at Strack's station to pass under the railroad.

His architect worked out a triangu-

Motorists Buy Cooling Drinks at Oil Pits

COMFORTABLE benches have been placed by Bill Strack at the head of his grease pits at his East Cleveland station so customers, if they wish, may watch the lubrication work.

When hot weather came some weeks ago a salesman induced Bill to put in a small cooling cabinet and a stock of coca cola. The first day it was in, four dozen bottles were sold to car lubrication customers. This added a few dimes to the day's profits.



A full house in Bill Strack's greasing palace. This is a common scene of early evenings, Saturdays and Sunday mornings

lar plan which gave a good sized sales room, toilets for men and women, an office for Bill, five greasing pits, an oil storage room, small office for the greasing pit men, and a large triangular room at the rear.

The triangular room is used as a brake station and a good sized adjusting and relining business is done.

Two men are regularly employed on the brake service and at rush times two extra helpers are brought in of evenings or weekends. They are employed regularly in a Cleveland automobile factory and know the brake business.

It is possible for Strack to buy gasoline in tank car lots and store it underground at his station but he buys from the Cleveland marketing subsidiary of the Pennzoil Co. of Oil City and hauls it from the bulk plant in his own 750-gallon tank truck.

He has six 1000-gallon gasoline tanks buried and six pumps, three of which are used for regular gasoline, one for high test, and two for Ethyl. This storage is ample to carry him over weekends or holidays. One of the three men he has working at the station drives the truck and fills the tanks on the quieter days of the week. No gasoline is hauled Saturdays or Sundays but each Friday every tank is filled and the supply is sufficient to last over the weekend.

The saving by hauling his own gasoline is 1 cent a gallon under the tank wagon price specified in his contract. He says by having the service station man haul the gasoline during the off peak hours of the week he can transport it for less than 1 cent after allowing the usual charges in tank truck operation.

This tank truck also supplies two filling stations which Strack owns but which he rents to operators who have learned the business at his station. He supervises the policies of those stations and supplies them with gasoline and oil. He gets a percentage of the business but the operators make more than he makes out of those stations, Mr. Strack says.

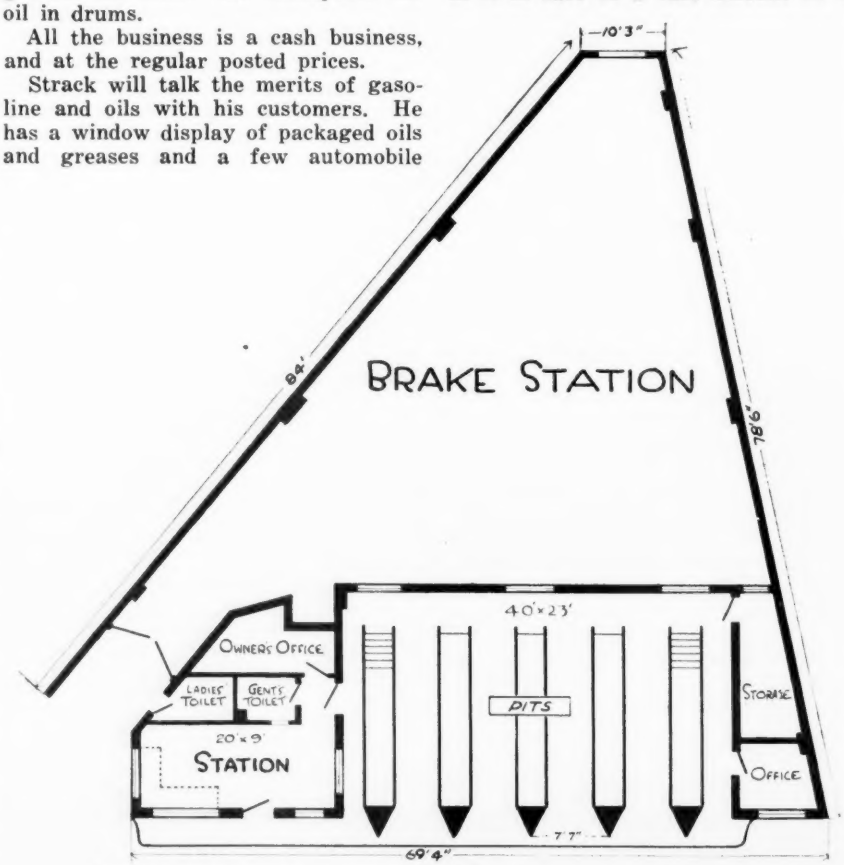
The advantage of having dealer-operators, he says, is that each operator is in business for himself and will work harder to get new business and hold the old. One station which Strack rents for $100 a month is paying the operator $300 a month net.

Strack also hauls the oils and greases he sells. He transports his oil in drums.

All the business is a cash business, and at the regular posted prices.

Strack will talk the merits of gasoline and oils with his customers. He has a window display of packaged oils and greases and a few automobile supplies. Some of these supplies are sold by the head filling station man for his own account. They give him a little extra money, although he is paid more than the usual Cleveland scale for such work, largely because he is a good salesman and has a knack of making friends.

Strack handled tires for three weeks after he opened the new station in late spring but quit the tire business because he said competition was too great and there was too much grief in it in face of a vast amount of cut



Ground plan and general dimensions of Bill Strack's station in East Cleveland

prices. He quit handling automobile lamp bulbs because some buyers, when they had a short circuit and burned out new bulbs, would claim the bulbs were defective. He will sell nothing he cannot sell at a profit and at the same time keep his customers satisfied.

Last fall Strack bought a transmission and differential flusher. The week before it was ready, he passed out to all customers a small handbill on which was printed, "A New Service is Coming." He did not tell what it was. When the service was ready he distributed a folder telling of it and the need to have the grease changed from a summer to a winter grade.

When the new station was ready he announced the opening in a full page advertisement in an East Cleveland newspaper. He also uses large painted boards about his station, the background of the boards being the same color as the stucco on the upper part of the station building. One large board extends along the base of the railroad embankment. It is partly on a small tract of ground the railroad owns but which he leases at $1 a year. This tract had been covered with rubbish, so Strack cleared it off and planted grass and shrubs in front of the board. He has shrubs in a crescent shaped plot between the sidewalk and his drives, which are of slag.

He owns all his equipment except the gasoline tanks which were installed by the company from which he buys his gasoline. He has standardized on one make of pump which he says is the nearest gyp-proof he could buy. A year or two ago he bought some pumps which he found could be operated to give short measure easily. He quickly scrapped them.

All gasoline is metered and an inventory of all gasoline and oil is taken just before the station is closed each night.

Dunn Proposes Refinery to Run Southeastern Ohio Crude

CLEVELAND, Aug. 9

BUILDING of a modern refinery in southeastern Ohio as a profitable means of handling the oil produced in that section was proposed by Orton C. Dunn, of Smith & Dunn, oil producers of Marietta, at a meeting of the Southeastern Ohio Oil and Gas Producers' Association held at Logan, O., recently. In this connection Mr. Dunn said:

"The real solution of our problem is in building a modern refinery of about 2000-barrel capacity at some well located place like Logan and possibly another at a strategic point to use our own oil line like they do in northern Pennsylvania.

"I find that a plant that was built 4 years ago is now about obsolete, and a modern plant could be constructed at perhaps half the cost of the old style plants, and which would represent a saving of from $2 to $4 per barrel in refining costs.

"And then again a plant at Logan could sell its entire product within a radius of from 60 to 70 miles and the cost thus saved in transportation would almost pay the entire refining costs. Such a plant could be built for $600,000 and I am led to believe by responsible eastern bankers that it could be underwritten for a large proportion of its cost.

"A good refinery man, who is superintendent of one of the eastern plants, was more than enthusiastic and ready to join such a move. I am convinced that if some of us would enter into a closed corporation and subscribe one-half of the amount necessary, that it could be done. We would not even have to look for a market; there are jobbers in our district that could handle our entire product with ease, and we could make a profit at the refining business too."

Concerning production, Mr. Dunn said in part:

"There is no use fooling ourselves about the supply of oil. I am in constant touch with the west and they are all on nerves out there for fear that some one will break over and attack the present scheme of prorating in the Seminole, Hendricks, and several other pools where it is now in effect.

"I recently heard a statement made by one of the directors of the Pure Oil Co. that they now have more production shut in than they are producing, and even under this scheme there will be a large increase in our daily production on Aug. 15, when certain restrictions are removed at the Little River and other parts of the Seminole field.

"The production of oil is no longer a local problem, but the whole world has to be reckoned with. Our greatest menace at the present time is Venezuela. They are now shipping into the United States about 300,000 barrels per day, which is being increased daily, or as fast as they can add new boats to the service. This oil is coming to our eastern ports, and to the very refineries upon which we were dependent to use our eastern oil, and they are now running largely upon this oil from South America."

Bill Strack's filling station, greasing palace and brake station at Hayden Ave. and Eddy Rd., East Cleveland, O. The building is of skintled brick and stucco with vari-colored asbestos shingles. A. N. Ferguson, Cleveland, was the architect

Accounting Methods for Refineries

Article Two

Importance of Using Current Market Prices as Inventory Values

By Henry W. Ralph

Eight Articles on Refinery Accounting

THIS is the second of a series of eight articles on refinery accounting methods written exclusively for NATIONAL PETROLEUM NEWS by Henry W. Ralph, who established the system under which the Indian Refining Co. operates and is now associated with H. S. Bell, consulting refinery engineer, New York.

HENRY W. RALPH

The first article in the series appeared in August 8th issue of NATIONAL PETROLEUM NEWS.

In this accompanying article the importance of using current market prices for petroleum products for maintaining inventory values at the refinery is pointed out. It is shown that this practice, carried out in each department, is the basis of information which will show the plant executive what department is losing money, operating at the lowest rate of profit, and so on.

Later articles will show what kind of a record must be kept to establish these market prices, or net realizable value at the refinery, the factors which must be taken into consideration in establishing these values, and methods which will take the minimum of clerical effort.

IN COMMON with many other industries in which the original raw material is broken down into several products—(of which each may be of approximately the same importance or of which one may be the main product and others by-products) the question of developing the actual cost of any product is being kept continuously active. This is mainly by people who are either unacquainted with the facts of the business or have not learned through reasoning or experience the vagaries which "cost" figures will perform over a period of years—produced on any basis so far devised.

From the standpoint of maintaining inventory values which will not be grossly in error there is no scheme more plausible than the allocation of raw material value and undistributable expenses on the basis of ultimate sales value. It is clear, however, that this method does one thing only—it distributes to each product in proportion to its ultimate value the profit or loss which accrues as the result of the entire operation. Instead of giving more useful information, it destroys the significance of the most important figure you can have by breaking it down into arbitrary pieces.

The answer to this problem is the same for petroleum as for similar industries. The "cost," as generally understood, is not obtainable. Instead of such a cost we have a much more valuable fact—the current market value (sometimes called an opportunity cost) and the knowledge whether a gain or loss has been incurred in our complete manufacturing operation.

There exists in the minds of other people the idea that the petroleum industry is in dire need of a standard system for developing costs of the various petroleum products. The assumption is that, if a refiner knew how much his gasoline cost him, he would not sell it for less than the cost. There are two very serious errors in this point of view. The first error is that the refiner would sell only when he could get a price commensurate with his production cost. The market price is not made by a single refiner, however, and, if it were practical to put such a scheme into effect, the refiners who made gasoline at the higher cost would be unable to sell their gasoline.

The second error is that the cost of an article is the determining factor in its selling price. With a monopoly this might be the case; but where the commodity is well nigh universally produced each refiner must take the price at which his competitor is willing to supply the demand or fail to sell his product.

Crude petroleum is broken down in the manufacturing process into several products and the total cost of the raw materials, supplies, labor, etc., can be precisely determined. The sum of these represents the cost of all products. All that we know definitely about the cost of any single product is that it consists of the items of cost which are peculiar to that particular product and that its cost added to the cost of all the other products must equal the total cost. It is perfectly clear that there are not enough known factors to enable the establishment of a cost figure for each product; and only a little experimentation will be required to show that the effort to produce cost figures by following some rule of thumb will lead to ludicrous results.

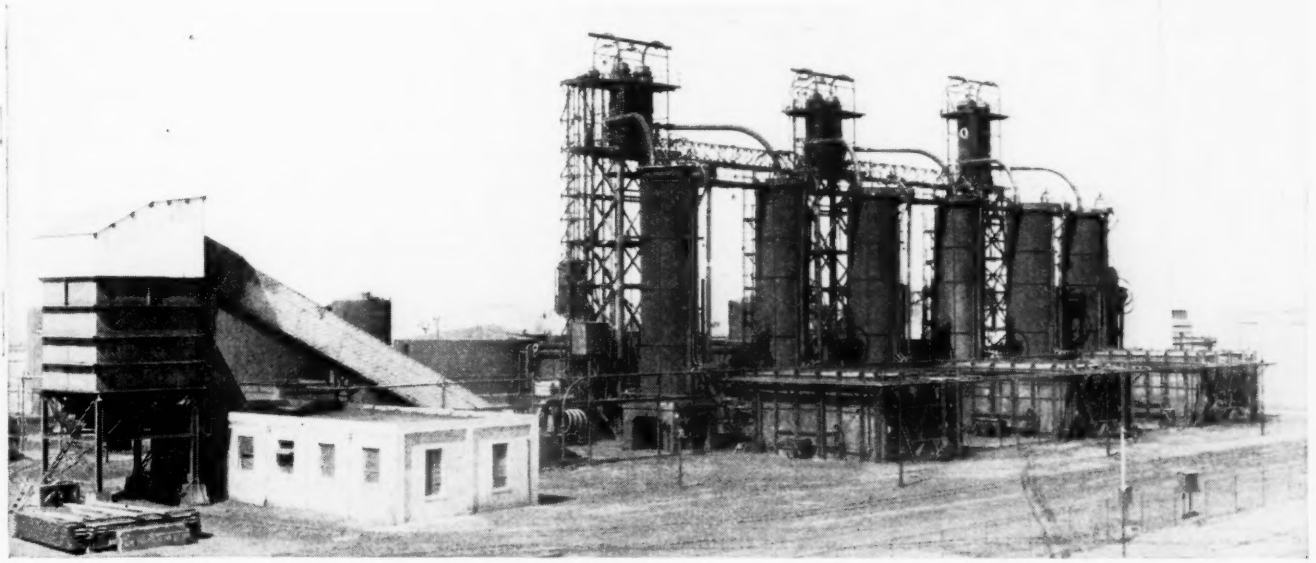
The difference between the total amount expended for raw materials, supplies, labor, etc., and the amount realized from sales will be either a profit or a loss. We have already commented on the fact that it is a general practice to calculate the proportionate amount of the total cost for each product in accordance with the realization value and value the inventory accordingly. It must be realized, however, that a value of this kind has no relationship to cost.

THE net result of such a distribution of total cost according to relative realization accomplishes nothing except to change what might be considered its market value—or its "opportunity cost" by an amount which is dependent upon the total profit or loss earned as a result of the entire business transaction, and to set up a value which can be safely used for inventory purposes.

In the above paragraph a truth has been stated—but I would like to state it more simply. No way has yet been found to determine the actual cost of any petroleum product. Indeed, it is a fairly simple matter to prove that there are so many in-

A Modern Cracking Plant

New Dubbs cracking plant at Producers & Refiners Corp., Parco, Wyo., refinery. Six units; two are 72-tube furnaces; four units are 62-tube; 10 feet diameter by 40 feet high A. O. Smith Corp. electric welded reaction chambers; six Dow hot oil pumps; 3 feet 6 inches diameter by 21 feet 2 inches long dephlegmators; Byron-Jackson common centrifugal raw oil and pressure distillate recirculating pumps—Terry steam turbine driven; Lientz flue gas recirculating system, fans Sturtevant steam turbine driven; Byron-Jackson centrifugal charging pumps, Terry steam turbine driven; Worthington steam duplex pumps. Total charging capacity 4000 barrels a day. Jeffery steel aproned incline and horizontal conveyors; Midwest Piping & Supply Co. pipe. Dephlegmators and reaction chambers insulated with Johns-Manville rock wool insulation. Hot lines and steel dephlegmator towers insulated with Johns-Manville duplex blocks.



definite (or variable) elements in any equation of cost for petroleum products that it is demonstrable mathematically that it is an impossibility.

All that can be done is to develop a method of pricing each product which will be satisfactory for certain purposes. The method of pricing which is the best to use will be dependent on the purpose for which such pricing is desired.

The method of pricing that has been found to have the fewest defects is that of pricing at the market value —and this method is considered by some writers to give an "opportunity cost."

Because it can be demonstrated mathematically that a genuine cost figure can not be developed for a petroleum product it does not follow that the facts that can be developed in relation to costs of raw materials, supplies and manufacturing processes are not valuable.

If cost accounting can not be relied upon to produce that fact which is deemed most important in the industry—it is desirable that we discover what facts can be produced which will enable the refiner to operate to better advantage. Cost accounting in its broader aspects will be found then to be similar to the defect of speech that handicapped Demosthenes. It will be the one element through which success can be attained.

Because we are unable to determine the cost of the individual products we are compelled either to do without knowing the value of the product of our refinery or to establish some kind of a price. What is more obvious or more simple than to value our products at the market price—the net realizable value at the refinery. And if we subtract from this total the sum of our raw materials, supplies and expenses we can tell immediately whether our manufacturing operation has been profitable.

LATER articles will show just what kind of a record may be kept to establish net values at the refinery; and the factors that must be taken into consideration in establishing these net values; and also discuss the methods that will give these significant facts with the minimum of clerical effort. These, however, are details which do not affect the validity or soundness of the preceding paragraph.

The net result of our manufacturing operation may be profitable or the reverse. Regardless of the result the question arises: "Was it as profitable as it might have been?" Again it must be stated that, unless you have records which have been designed to show how profitable the operation of a refinery might have been over the period in question, you can not answer the question.

When there was a large margin between the price of crude oil and its products it may have been possible to run crude oil in almost any manner and still continue to earn money. This condition no longer exists. It is occasionally true that the relationship of prices is such that the problem becomes one of making the smallest loss rather than the largest profit.

How to Earn Maximum Profits

In the refining of petroleum, it is necessary that a certain flexibility be maintained if the highest possible profits are to be realized. That operation will ultimately be most profitable which will use the capacity of the plant and give the largest spread between the total realization of products and the cost of crude plus refinery expense. Due regard must be had to future shipping commitments, and it may happen that what seems the most profitable manufacturing program can not be carried out in its entirety, but it is only by giving careful thought to the manufacturing possibilities and the cost of various operations that the best combination may be obtained.

It is, of course, true that, if certain refineries are using processes which are much more efficient than competitors are using, they can main-

tain a standard run for a long period to obtain maximum returns, but improvements are often made by other companies which have converted apparently excellent assets into serious liabilities over night. Eternal watchfulness in this as in other affairs, is the secret of success. If a refinery can not be run to make a profit from day to day, plans must be made which will enable it to do so in the future, and in the meantime it must be run so as to keep the losses at a minimum.

The criterion each day is this. The sum of the products must exceed by the largest possible amount the sum of manufacturing expenses and the cost of crude. Generally speaking, the throughput must be as large as possible to reduce the unit cost of the overhead to the minimum. In doing this it will be found necessary to see that throughput is not forced to the point where manufacturing losses become excessive. For each processing operation we must know the unit cost. If any processing unit is shut down temporarily, the charges against it must be included in the overhead. If permanently discontinued, the investment must be written off as a loss and thereafter ignored in computations of manufacturing costs.

Defect of Main Product Cost For Gasoline

In many industries it is customary to price all products except one at a market price and develop the "cost" of the main product by deducting from the sum of raw material and total costs the market value of all other products. At times when the plant is operating profitably this method serves to build up a reserve against market decline and it may sometimes have a real use in establishing values for inventories which will be accepted by professional accountants since it entirely eliminates the element of profit earned in manufacturing and there is no profit shown until the goods are actually sold. As the percentage of gasoline produced from crude oil rises, this method is likely to find more and more favor; particularly when the demand for profits from manufacturing is not insistent.

Departmental Profits and Loss

Again reverting to the idea that market prices constitute an opportunity "cost" for products, it is essential that transfers between departments of raw material, intermediate and final products be priced in a manner consistent with market prices. Most intermediate products in the distillation of petroleum fall into a class for which standard prices are available, being published in daily newspapers, trade bulletins and trade journals. For those that are not already classified, it will only be necessary to make some variation from published prices to provide for its greater or less value.

The profit or loss of any organization is dependent on the difference between the realized sales value and the cost of goods sold as contrasted with organization expenses. The same yardstick applies to every department. Each department must be charged for its proper expenses; and it must be charged for all materials and products received by it and be credited for all products delivered by it. It is usually true that the most important factor in determining profit or loss is the price at which products move into and out of departments. If pricing is not consistent with market values, there is a grave likelihood that erroneous conclusions will be reached.

If a department receives as raw material one or more commodities with recognized market values and produces other products with definite market values, the answer is obtained by the use of market prices, adjusted if necessary by a freight differential of whatever amount seems necessary because of location of plant. If this is not the case, it will usually be found desirable to develop a "normal" cost figure for each operation and thus compare the actual cost with the "normal," thereby developing the profit or loss of the department.

If the accounting structure is sound, in accordance with the facts, the profit of any department is a criterion of its efficiency. Some departments or processes are a necessary step in the complete manufacturing operation; others are not. For the latter type the question of operation will be dependent entirely on the ability to earn profits.

The preceding paragraphs were written on the assumption that all stocks transferred between departments were products of the refinery, which is, of course, not invariably the case. There will be purchased stocks for processing materials or consumable supplies which will be chargeable to certain departments. If they are of major importance from the standpoint of quantity or relative costliness it may be desirable that departments or processes be charged at market prices from day to day. In general, such purchased stocks, raw materials and supplies will be of minor importance and it will be found sufficiently informative to charge the benefited units at the cost of purchase, or the cost at which they are carried in the inventory.

It should be borne in mind that purchased stocks which are worth less than the price paid for them should not be carried in inventory at the purchase price but should on the occasion of a periodic inventory be priced at market, in accordance with the usual practice of inventorying at cost or market whichever is lower.

Air mail crosses the continent in 31 hours, less than a day and a half. In 1860 it took the pony express 14 days to make the same trip.

Engineers Select Points to Study

DALLAS, Aug. 10.—Selection of a group of subjects for study by the division is expected to be made at the meeting of the Texas-Louisiana-Arkansas district of the American Petroleum Institute division of development and production engineering. The meeting is to be held Sept. 5 and 6 at the Galvez hotel, Galveston.

In sending out the preliminary announcement and program, Carl A. Young, executive secretary of the division, stated that the program committee, of which W. H. Meier is chairman, is anxious to have as many field men and production engineers at the meeting as possible because "in addition to having papers of special interest, this meeting will also be devoted largely to selecting the various subjects for national study as suggested by the national committees on drilling and production practice as contained in General Circular D-12.

"It is requested that each member of the district carefully review Circular D-12 and come prepared to make recommendations on the subjects that he considers of paramount importance as well as the order in which they should be studied."

A suggested list of subjects which accompanied the announcement follows:

Drilling Practice Committee

(1) D-10. Casing Practices.
(2) D-12. Drilling-in and Formation Test Practices.
(3) D-9. Mudding Practices.
(4) D-13. Drilling Areas of High Gas Pressure.
(5) D-17. Rotary Drill Pipe and Tool Joints.
(6) D-7. Formation Cutting Tools.
(7) D-11. Cementing and Water Shutting-off Practices.
(8) D-8. Fishing Practices.
(9) D-4. Drilling Prime Mover Equipment, General.
(10) D-5. Steam Boiler Equipment for Drilling.
(11) D-20. A.P.I. Standards for Drilling Rig Equipment.
(12) D-3. Rigs and Derricks.

Production Practice Committee

(1) P-2. Flowing Wells.
(2) P-4. Pumping.
(3) P-3. Gas Lift.
(4) P-5. Repressuring Partly Depleted Fields.
(5) P-8. Emulsions.
(6) P-14. Equipment.

Price Change

NEW YORK, Aug. 14.—Standard Oil Co. of New Jersey today advanced export kerosene (water white only) a quarter of a cent a gallon. The new price is 18.65 cents.

The Editors' Viewpoint

National Petroleum News

World Wide Balance

A WORLD wide study of supply and demand for petroleum products is but a natural outcome of the talking and thinking which has been going on in the oil industry the past few weeks.

Conservation of oil company finances—which is the money of the investing public—conservation of oil industry facilities, and conservation of the crude oil supply, the need for which has been vigorously but sanely impressed upon the oil industry by the government, can lead but to one thing. That is an operation of all crude oil producing areas with a reasonable regard for the needs of the world's market and the safety, as well as the profit, to the dollars of the investing public of the world.

Operating the petroleum industry so that part of the investing public's money is jeopardized, if not even lost, is not sound business nor fair dealing with the public even if the public saves a few pennies for a while in the price it pays for the products of petroleum.

So the effort which has been put forth by many American oil men through E. B. Reeser, president of the Barnsdall Corporation, to cause the major units of the oil industry of the entire world to give some thought to their foreign operations, that these be so conducted that they not disrupt the industry in this country, should receive the hearty support of every man.

There are many obstacles to be overcome in any such study and in the application of any general policy. Perhaps the obstacles can never be surmounted, as we think of surmounting them, by absolute shut down agreements, etc. But, from the discussion should come a little straighter thinking on the part of the bigger units in the oil industry of the world, and from that thinking unquestionably will come saner operating policies.

It is of little use for the oil men of this country to get their house in order, to so cooperate with the government idea of conservation that crude is kept in balance with demand and that refinery runs do not exceed the market requirements; if those operating in foreign fields, South America and elsewhere, seize on profitable markets in this country to dump excessively low priced crude from those fields.

True, the thought of the government in its conservation work is that we should not drain America dry and leave it dependent solely on foreign crude; but that does not mean that foreign crude should be dumped on America's markets, or even the world's markets, in such quantities and at such a rate as to devastate the American petroleum industry. Yet the competition between the larger units in the world's oil industry operating in foreign fields threatens just that.

America, and all countries, can benefit from foreign producing fields by the gradual introduction of their output in America's—and the world's—markets without injury to the industry anywhere. American producers, and particularly American land owners, in the course of time can be made to realize that the consumer can rightfully demand benefits from foreign crude, and by education be caused to keep their operations within reasonable bounds.

The problem is a great one and probably can only be worked out by sound operating policies on the part of each company, arrived at by their executives using wise measures, each on behalf of his own company. A certain number of operating agreements may be needed in some fields; but with only a handful of companies interested at the most, such agreements should be relatively easy to arrive at, compared to the complex conditions in the present big fields of this country where agreements have been invoked to the benefit of all.

Mr. Reeser's efforts are the outgrowth of the operating agreements effected in the southwest. He has talked to many of the leaders in the industry this summer. But some have been out of the country so the discussion has progressed slowly. But there is no reason why it should not go forward rapidly this fall and winter.

The main objective is to get the heads of the bigger units to see the whole picture, to be informed on all of it, so that, as their own company's policies come up for decision, these decisions can be made more intelligently.

The new thinking of the oil industry to keep itself in balance is giving much promise of successful operation of the industry, operation that will get away from the violent swings from high to low and back again which have marked the industry during its short history, and which some have figured out have brought the industry about as much loss as they have profit.

Let this sound principle of balance to reasonable markets, giving due regard to the costs of American petroleum production, be applied to the foreign situation, too.—W. C. P.

Tightening Up on "Spot" Shipments

A STEP forward in tank car marketing practices is seen in the action taken by many eastern refiners and carlot marketers recently in narrowing the delivery period under which spot gasoline sales are classed. The custom of selling today at one price for shipment over 30 days, classifying the transaction as spot, has been common in the east for as long as many an oil man can remember.

A steadily advancing tank car market presented itself this spring. It was realized that benefit from higher prices could not be had until old commitments were out of the way. In recent months particularly it has been the habit of major sellers to virtually cover the jobbing trade at today's price. Tomorrow's or the next day's advance of a quarter or a half-cent was practically meaningless until the 30-day period had expired.

Major sellers in the New York harbor market now quote for shipment within 10 days. Leading companies in other seaboard markets quote for shipment over the first half of July only. A few companies offer for last half of July but at a quarter-cent higher than prices for the first half. Although the movement to cut down commitment periods is not yet unanimous, at least the ball has started rolling.—J. P. M.

Review of Late Production News

PRODUCTION of crude in this country decreased 15,000 barrels daily average gross, for the week ending Aug. 11, as compared with the previous week, according to the figures of the American Petroleum Institute.

Total crude supply was 2,560,771 barrels, a drop of 113,000 from total supply a week ago. Almost 100,000 barrels of this decrease came through a drop in crude oil imports, and only represents smaller shipments received at this country.

Oklahoma production gained about 12,000 barrels for the week, almost entirely through increased output in the St. Louis pool.

West Texas dropped nearly 18,000 barrels. The decrease was in Pecos and Winkler counties, whose output is under proration.

Long Beach was principally responsible for a drop of 5000 barrels daily average output in California.

Crude oil prices were without change during the week, except for minor readjustments.

Oklahoma-Kansas

A 20,000-barrel well in the St. Louis pool, in Oklahoma, a township west of the Little River field in the Seminole district, has brought to the front again discussion of plans for a state-wide restriction of flush pools.

This discussion is given impetus by the rapid drilling in of 40 wells in the Little River area which were held to within striking distance of the sand under agreement of operators in the territory. At midnight Aug. 11 these wells started a dash for the sand. They can produce at capacity until Aug. 15, when the restriction becomes effective which holds production in the territory to 1600 barrels per 80-acre tract until Sept. 15. They are all in what is regarded as proven territory.

The big well in the St. Louis pool is that of the Independent Oil & Gas Co. It is important because of its size rather than its location, as it does not extend the pool. It will probably delay completion of more wells because production of the pool is now 65,000 barrels a day from all formations, while pipe line capacity is a maximum of 86,000 barrels.

The Gypsy Oil Co. et al. No. 1 Wright, eight miles north of Wichita, Kans., a wildcat, is reported flowing 1500 barrels a day from what is believed to be the Wilcox sand. Its discoverers control nearly the entire structure.

Plans for a state wide restriction of development of flush areas would probably include, outside the Seminole district proper, the Mission pool in Twp. 8N-5E and the Barnsdall pool in Twp. 8N-6E. The St. Louis pool is generally considered a part of Seminole district. If so considered it is possible output of the district may again reach as high as 400,000 barrels.

California

BY SEPT. 1 nearly 100 wells will be drilling for the new deep oil sand in the old Santa Fe Springs pool, which was opened only two weeks ago by the Wilshire Oil Co. 2500-barrel well producing just short of 6000 feet. This well is still understood to be holding up at about that figure. The oil is about 37 A.P.I. gravity.

Since it takes from 100 to 120 days, under the most favorable conditions, to complete wells to the depth of the new sand, it will be around December before new production from this field will make itself felt. There are few old wells in the field which can be deepened.

By that time it is possible the decline in production at Long Beach may offset, in part at least, the expected increase in Santa Fe Springs.

Last week six completions at Long Beach averaged flush output of 800 barrels a well, not sufficient to offset the natural decline. It is doubted if Long Beach will again hold at 200,000 barrels daily average for any length of time.

Drilling activity in other fields is slow, with operators showing every inclination to hold back development.

Texas, New Mexico, Louisiana

SPUR lines of the Shell Pipeline Corp., and the Magnolia Petroleum Co., will provide first outlets for deep lime production of the Roberts-Settles area, Howard-Glasscock counties, west Texas, under the railroad commission prorating order effective Aug. 15.

The Shell is expected to handle about 6000 barrels of crude daily from the area and the Magnolia a somewhat greater amount.

Wells shut in since completion may now be opened for production prorated at a maximum of 15,000 barrels daily for the first month and 25,000 barrels daily thereafter for five months.

With prorating orders effective in Howard-Glasscock, Pecos and Winkler counties, all threatening areas of west Texas are limited to maximum production of 265,000 barrels daily, plus settled or semi-settled yields that will hold the salt basin region at levels between 350,000 and 375,000 barrels, maximum daily, the remainder of 1928.

Aside from completions in proved territory where production is limited by prorating machinery, west Texas was quiet throughout the week. Wildcatting operations in southeastern New Mexico added nothing of outstanding interest.

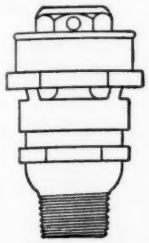
In De Soto parish, Louisiana, a test of R. O. Roy and others, about six miles northwest of Mansfield, in 6-13-13, found 40,000,000 cubic feet of gas, initial flow, under 1235 pounds reservoir pressure, at 2827 feet. The test is in new territory north of the old Naborton development and west of the Crichton district.

Wyoming, Montana

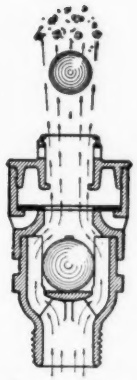
THE TEXAS CO. has started work on its 3000-barrel refinery at Cody, Wyo. The plant will run on Oregon Basin crude. The Texas Co. interests have acquired considerable property in this field.

Midwest Refining Co. started running crude through its 45 miles of four-inch pipe line from the Le Barge field in southwestern Wyoming to railhead at Opal, Aug. 11. Daily production at Le Barge is 2500 barrels. There is about 100,000 barrels in storage in the field.

Three wildcat tests in western Wyoming and eastern Idaho are attracting attention because of their distance from known production. The California Co., eastern subsidiary of the Standard of California, is drilling on the Meadow Creek structure, near Ririe, Idaho. The same company is drilling in Sec. 12-32N-115W, five miles east of the Idaho-Wyoming line. Midwest Refining Co. is preparing roads to a location on Little Grey River, Sec. 36-37N-117W, eight miles east of the Idaho-Wyoming line.

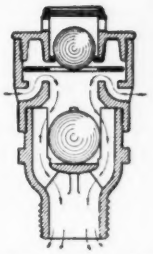


Outside View



In Case of Fire

Fusible metal top melts —large escape prevents tank from bursting.



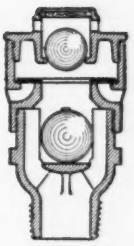
Admitting Air

Air is admitted through side vents while contents are being withdrawn.

The new Wheaton Vent Valve for Truck Tanks

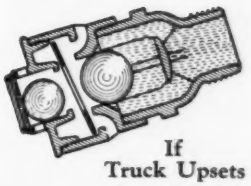
Relieving Pressure

Excess pressure is immediately relieved — upper ball rises and releases air.



Normal

Showing valve in normal condition—both intake and escape vents closed.



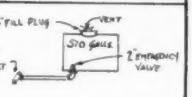
If Truck Upsets

Bottom ball closes vent and prevents loss of gasoline.

NEW Vent Valve—*made by* WHEATON —proven MOST EFFICIENT of all!

98.8% Efficiency!

TESTS OF TRUCK TANK VENTS
510 GALLON TRUCK TANK COMPARTMENT EMPTIED THROUGH 8" PIPE 5'0" LONG, EQUIPPED WITH 2" EMERGENCY VALVE AND WHEATON 2-24 FAUCET



VENT	CONDITIONS AND REMARKS	TIME MIN.	GALLS/MIN.	EFFICIENCY %
NONE	6" FILL PLUG REMOVED	8.96	56.9	—
¾ PIPE	¾" NIPPLE USED FOR VENT	8.98	56.8	—
No 1	A TRIPLEX VENT ¾ PIPE THREADS	16.66	30.6	53.8
No 2	A DUPLEX " " " "	11.72	43.5	76.5
No 3	A " " " " "	11.08	46.0	80.8
No 4	A TRIPLEX " " " "	13.40	38.0	66.8
No 5	A " " " " "	15.20	33.5	58.9
No 6	A " " 1" " "	10.05	50.8	89.3
No 7	A " ¾ " "	9.42	54.2	95.3
WHEATON	WHEATON TRIPLEX	9.08	56.2	98.8

HERE'S a *new* Vent Valve—made by Wheaton—that permits faster unloading than any other vent on the market. Tests *prove* it. Read the report at the left, which tells how this vent surpassed all competitors—with an efficiency rating of 98.8%!

Look at the diagrams at the top of this page. See how this new Wheaton Vent Valve positively *prevents evaporation.* See how excess pressure is immediately relieved by a simple ball check, and observe how air is admitted as contents are withdrawn. Note the remarkable *safety* features—how loss of contents is prevented if tank overturns; how fusible top melts and prevents tank from bursting in case of fire.

Replace your old vent valves with the Wheaton. It will save you hours each day in unloading. It will safeguard your tanks and product. And it will give you *longer service.* Wheaton Vent Valves are made of *all bronze*—the same tough, long-lasting bronze found in the finest Wheaton faucets and valves—machined and finished with characteristic Wheaton care. Send for a sample today. Give it your own test. If not entirely satisfactory, return it for credit or refund.

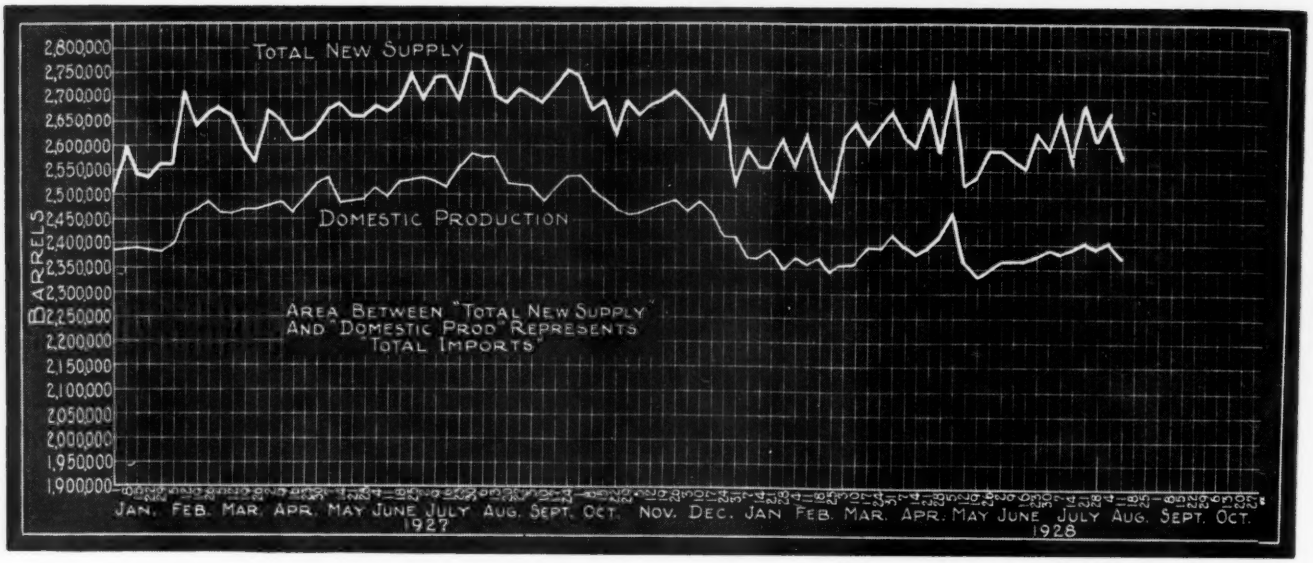
A. W. WHEATON BRASS WORKS, NEWARK, N. J.

Empire Brass Mfg. Co., Ltd., London, Ontario, Canadian Manufacturers and Distributors

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Aug. 11	Aug. 4
Production east of Rockies	1,752,500	1,762,150
Decrease		9,650
Total production in U. S.	2,389,200	2,404,150
Decrease		14,950
Crude oil imports	171,571	269,714
Decrease		98,143
Total crude supply	2,560,771	2,673,864
Decrease		113,093

OKLAHOMA

	Aug. 11	Aug. 4
North Braman	3,000	3,000
South Braman	1,450	1,500
Blackwell	3,450	3,450
Hubbard	2,650	2,600
Thomas	1,350	1,400
Tonkawa	13,100	13,350
Garber	8,350	8,400
Burbank	29,000	29,400
Osage, outside Burbank	26,950	26,900
Cushing	20,000	19,900
Yale Jennings	7,550	7,550
Davenport	1,900	1,900
Bristow-Slick	20,950	21,050
North Okmulgee	14,700	14,750
Pearson	3,750	3,900
Lyons-Deaner	5,850	5,850
St. Louis	50,600	39,500
Allen Dome	21,400	21,950
Cromwell	9,450	9,400
Papoose	4,150	4,100
Wewoka	5,600	6,000
Seminole	50,200	50,100
Bowlegs	55,950	56,550
Searight	12,850	12,700
Little River	45,300	43,400
Earlsboro	77,250	75,700
Duncan district	7,850	7,800
Graham	5,350	5,350
Fox	1,650	1,600
Healdton	14,100	14,150
Hewitt	9,700	9,600
Scholem Alechem	15,800	15,750
Others	53,350	53,600
Total, Oklahoma	604,600	592,150
Increase		12,450

KANSAS

Greenwood County	28,500	28,350
Florence-Covert	1,000	1,000
Peabody-Elbing	3,250	3,200
Eldorado-Towanda	12,850	12,900
Augusta-Fox-Bush	3,350	3,350
Rainbow Bend	1,550	1,550
Russell	3,950	3,600
Churchill	9,450	9,850
Oxford	10,050	10,300
Others	28,800	28,900
Total, Kansas	102,750	103,000
Decrease		250

NORTH LOUISIANA

Homer	4,350	4,350
Haynesville	5,950	6,050
Caddo, light	9,650	9,750
Caddo, heavy	3,150	3,200
De Soto, Red River	4,050	4,050
Elm Grove	600	600
Bellevue	750	850
Cotton Valley	4,550	4,650
Urania	6,850	6,900
Pleasant Hill	600	600
Total, North Louisiana	40,500	41,000
Decrease		500

ARKANSAS

El Dorado	5,250	5,400
Champagnolle	12,950	12,650
Smackover, light	7,550	7,550
Smackover, heavy	57,800	57,450
Stephens	1,050	1,000
Nevada	1,250	1,350
Lisbon	1,950	2,000
Others	100	100
Total, Arkansas	87,900	87,500
Increase		400

TEXAS (Outside Gulf Coast)

Panhandle District

Hutchinson County	33,300	35,700
Carson County	6,700	6,650
Gray County	20,200	20,300
Wheeler County	950	900
Others	550	200
Total, Panhandle District	61,700	63,750
Decrease		2,050

North Texas

Burkburnett	9,750	10,000
Electra	13,500	13,650
Iowa Park and K-M-A	3,900	4,000
Wilbarger	36,000	32,800
Archer County	20,350	20,500
Montague-Cooke	10,750	11,000
Others	600	600
Total, north Texas	94,850	92,550
Increase		2,300

West Central Texas

Stephens County	7,000	7,100
Eastland-Desdemona	7,200	7,450
Brown County	12,100	12,200
Coleman County	3,450	3,300
Callahan County	3,500	3,500
Shackleford County	10,650	10,850
Young County	7,750	8,000
Throckmorton County	950	800
Palo Pinto County	450	400
Jack County	1,800	1,500
Others	600	600
Total, West Central Texas	55,450	55,700
Decrease		250

West Texas

Jones County	1,700	1,600
Mitchell and Scurry Counties	3,200	3,050
Howard County	5,100	4,950
Reagan County	18,300	17,950
Crane and Upton Counties	62,600	64,150
Crockett County	3,200	3,100
Pecos County	67,750	71,350
Winkler County	170,250	183,800
Others	1,500	1,600
Total, West Texas	333,600	351,550
Decrease		17,950

East Central Texas

Mexia	6,900	6,900
Currie	450	450
Richland	550	550
Wortham	1,700	1,700
Corsicana-Powell	10,500	10,550
Nigger Creek	1,000	1,000
Total East Central Texas	21,100	21,150
Decrease		50

Southwest Texas

Luling	13,500	13,250
Lytton Springs	1,100	1,100
Somerset	700	700
Laredo District	8,800	8,700
Dale	1,150	1,200
Others	400	400
Total, Southwest Texas	25,650	25,350
Increase		300
Total, Texas (outside Gulf Coast)	591,950	610,050
Decrease		18,100

GULF COAST

Coastal Texas

West Columbia	8,150	8,200
Damon Mound	800	800
Big Creek	3,700	3,850
Boling	2,100	2,300
Blue Ridge	6,300	7,000
Pierce Junction	10,500	11,700
Humble	1,400	1,350
Goose Creek	6,800	6,800
South Liberty	3,600	3,700
Hull	11,800	10,400
Saratoga	1,050	1,000
Batson	1,400	1,400
Barber's Hill	600	750
Sour Lake	3,400	3,400
Spindletop	37,700	36,650
Orange County	3,700	3,750
Others	3,450	2,250
Total, Coastal Texas	106,450	105,300
Increase		1,150
Vinton	4,450	4,500
Sulphur Dome	3,400	3,900

Coastal Louisiana

	Aug. 11	Aug. 4
Lockport	3,450	3,600
Sweet Lake	3,950	3,900
Evangeline	1,100	2,000
East Hackberry	4,050	6,050
Edgerly	1,050	1,100
Sorrento Dome	1,100	1,400
Others	1,600	1,750
Total, Coastal Louisiana	24,150	28,200
Decrease		4,050
Total, Gulf Coast	130,600	133,500
Decrease		2,900

ROCKY MOUNTAIN

Wyoming

Salt Creek	38,100	39,800
Grass Creek	2,400	2,450
Elk Basin	950	1,050
Big Muddy	2,700	2,700
Lost Soldier	4,000	4,050
Rock Creek	2,700	2,700
Lance Creek	550	600
Others	8,350	6,950
Total, Wyoming	59,750	60,300
Decrease		550

Montana

Cat Creek	1,700	1,650
Sunburst	8,300	8,300
Others	100	100
Total, Montana	10,100	10,050
Increase		50

Colorado

Moffat (Craig)	1,150	1,400
Fort Collins	2,600	2,700
Florence	1,350	1,100
Others	2,900	3,050
Total, Colorado	8,000	8,250
Decrease		250

New Mexico

Table Mesa	200	
Hogback	400	350
Artesia	1,100	1,100
Rattlesnake	1,050	1,200
Others	200	200
Total, New Mexico	2,950	2,850
Increase		100
Total, Rocky Mountain	80,800	81,450
Decrease		650

CALIFORNIA

Santa Fe Springs	38,000	38,000
Long Beach	194,000	198,000
Huntington Beach	52 000	52,000
Torrance	17,700	17,000
Dominguez	11,000	11,000
Rosecrans	6,000	6,000
Inglewood	29,700	29,000
Midway-Sunset	74,500	73,000
Ventura Avenue	53,000	53,000
Seal Beach	31,100	32,000
Others	129,700	133,000
Total, California	636,700	642,000
Decrease		5,300

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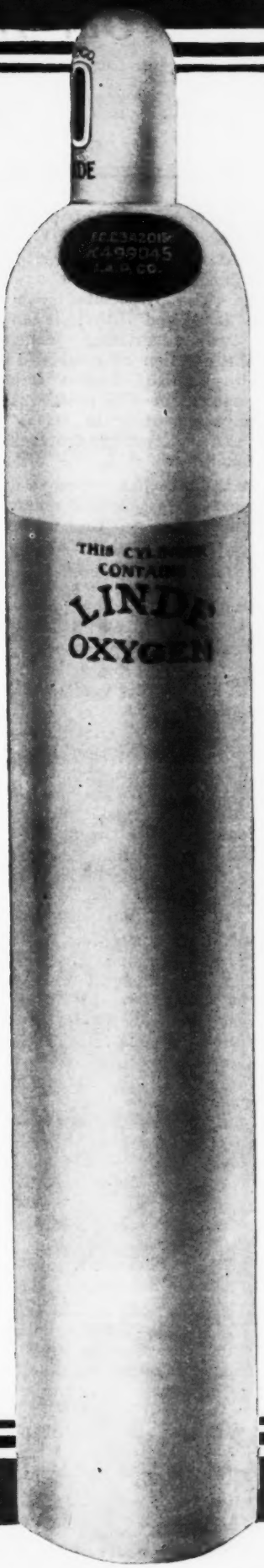

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LINDE OXYGEN

Our Industry—A Page of Facts and Personalities

By Paul Wagner

National Petroleum News

Jack and his bride Ethyl, broadcast by the Associated Oil Co. in their radio advertising on the Pacific coast, have established themselves as real characters. The Associated explains that its Jack and Ethyl broadcast involves two advertising elements: (1)—in the creation of good will and the building up of human interest in the romance of the pair; (2)—it affords an opportunity to stress the beauties and interesting features of various localities.

Already the plan has served to draw many people to the various points of interest, according to the company, and there is no doubt that much travel will be stimulated in the balance of the motoring season. Of course, Jack's bride Ethyl gets her name from the Ethylized gasoline sold by the Associated.

* * *

If you've never tried getting a perfectly good car out of a sand pile you'll not appreciate what happened to E. V. S. Lowerre of the Pure Oil Co., at Midland, Texas, recently. One of the west Texas sand storms picked up his garage and turned it around on its foundations. Half of the garage had to be dismantled to recover the car, but it wasn't even scratched as a result.

* * *

George R. Elliott, who has returned to Canada to become petroleum engineer of the Department of Interior at Calgary, Alberta, served for seven years in the oil industry of the Pacific coast and the Mid-Continent. He was last employed in this country by the Miley Oil Co., at Long Beach, California. At various times he was with the old Cosden Oil & Gas Co., at Tulsa; the General Petroleum Corp., the Associated Oil Co., and the Standard Oil Co. of California, in the Los Angeles Basin territory. He got his degree as Bachelor of Art and Sciences from the University of Toronto in 1912. Afterwards he attended Columbia University.

* * *

James W. Bradbury, assistant general agent of the Mexican Gulf Oil Co., at Tampico, spent his vacation visiting his mother in Houston after attending the annual meeting of Rotary International in Minneapolis. H. K. V. Tompkins, general agent, was a recent Houston visitor from Tampico. He was joined for the return trip by his son, Kenneth, who has been attending school in New Jersey.

W. C. TROUT
General manager, Lufkin Foundry & Supply Co. Lufkin, Texas

Walter C. Trout, vice president and general manager of the Lufkin Foundry & Supply Co., Lufkin, Texas, is one of the most widely known oil supply manufacturers in the southwest. Few important gatherings of oil men, whether state or national in scope, find him absent. Mr. Trout spends a considerable time in California each year, being called to the Pacific coast because of his business. Among the oil field supplies manufactured by his company is the widely known Lufkin pumping unit.

* * *

Formation of the Gilmore Dabney Gasoline Co., at Los Angeles, has been followed by appointment of C. S. Beesmeyer to have executive charge of operations. Mr. Beesmeyer is also vice president and treasurer of the Gilmore Oil Co.

* * *

J. E. Crosbie and C. H. Sweet of the oil producing firm of J. E. Crosbie, Inc., are now chairman of the board of directors and president, respectively, of the Central National Bank & Trust Co., Tulsa. In the oil firm, Mr. Crosbie is president and Mr. Sweet is vice president and treasurer.

* * *

Col. R. H. B. Moore, assistant manager of the land department, Vacuum Oil Co., with Houston headquarters spent most of July on a motor trip through the various fields of west Texas and southeastern New Mexico.

L. P. Maire, chief engineer of the Andian National Corp., subsidiary of Imperial Oil, Ltd., Toronto, has been spending his vacation in Pittsburgh. Mr. Maire's headquarters are at Cartagena, Colombia. He had not been in the United States for two years prior to his recent return.

* * *

E. C. Williams, formerly professor of chemical engineering in University College, London, England, will establish a research organization on the Pacific coast for the Shell Co. of California, subsidiary of the Shell Union Oil Corp.

* * *

Geophysical prospecting with seismic instruments, in the opinion of Donald C. Barton, Houston consultant, has speeded up discovery of Gulf coastal salt domes 100 years. Without geophysical methods, he recently said in a technical discussion at a meeting of the American Institute of Mining & Metallurgical Engineers, "we would not have had all the domes we now know after another century had elapsed." The finding of salt dome structures in the Gulf Coast is a preliminary to oil prospecting. Their presence is necessary as a vehicle for dragging source rocks and beds of accumulation to depths where they may be reached by the drill. Otherwise, they would be too deeply buried under the coastal mantle of recent formations for them to be reached by present operating methods.

* * *

John R. Suman, general production executive of Humble Oil & Refining Co., hasn't missed visiting many parts of the country in the last month and a half. After attending the standardization conference at Colorado Springs the middle of June he went to the Pacific coast on business, returning to Houston headquarters early in July. He then left in a few days for New York City.

* * *

It is probable the Union Oil Co. of California will utilize an airplane in mapping its Miahuapam concession in the state of Vera Cruz, Mexico, according to E. B. Noble of the geological department. This property, now under development, is in a region heavily covered with forest and jungle growth. To prepare a map by old methods would require months. The entire area can be flown over in a few hours and a finished map turned out in two or three weeks at most.

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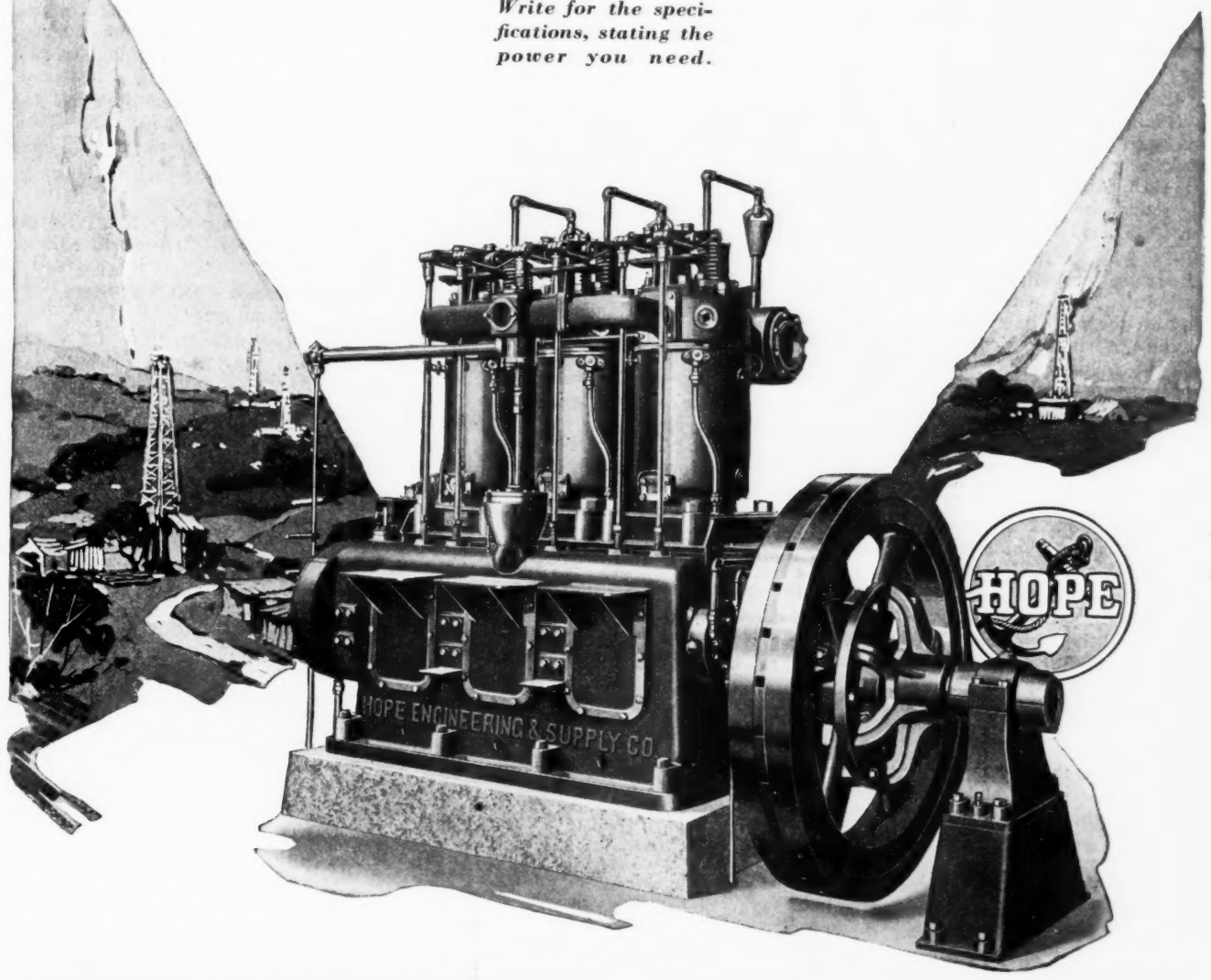

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Wells Showing Oil in New Mexico "Teasers" for Wildcatters

By Paul Wagner
N. P. N. STAFF WRITER

HOUSTON, Aug. 13

STUDIES of field conditions in the prospective oil producing area of southeastern Lea county, New Mexico, discloses that commercial oil is yet to be found in the territory.

Three productive wells in the general territory would be considered commercial were the oil pays found at shallower depths. As the situation stands, however, they represent mainly "teasers" for future wildcatting operations.

The latest test to make an oil show is the No. 1 State of the Empire Gas & Fuel Co., in 8-21S-35E, which was drilled for acreage out of a block originally held by the Endura Oil Co. About the middle of July oil found in a lime pay at 3817 feet rose 2000 feet in the hole in 15 hours.

Pressure accumulated several days until July 19, when the well made a head of about 30 barrels of 27.6 gravity oil. When the writer visited the well the following day work was under way of building a 500-barrel stock tank on the lease for a better test of its producing capabilities.

On July 23, a swabbing test was made and the well produced 125 barrels in four hours. The hole had filled to the top in the meantime, allowing the swabbing test to lower the fluid level 2500 feet.

The Empire well is about 18 miles southwest of the Midwest Refining Co.'s recently reported Hobbs-State test, in 9-19S-38E, now yielding about 210 barrels daily at total depth of 4084 feet.

Originally the Midwest well swabbed 30 barrels an hour at 4066 feet, but efforts to make it flow gave unsatisfactory results. A report that gained currency in west Texas last week was to the effect the Midwest well had shown water intrusion, but a visit to the property showed this to be untrue.

In taking tension on the 10-inch casing, which had been landed at 3060 feet, and reaming down for a seat for the 8-inch, water came in from behind the pipe. This was not shut off for three days, the time required for running 8-inch. After cleaning out and swabbing the well showed no water.

Gypsy Oil Co.'s No. 1 State test, in 34-21S-36E, about 12 miles southeast of the Empire well, remains shut down for orders at 3071 feet. This test found a high lime horizon, as previously[1] reported, and two bailers of oil were taken from the well.

The first test ever to show oil in Lea county was the No. 1 Rhodes of The Texas Production Co., in 22-26S-37E, which for more than a year has been good for upwards of 100 barrels daily of oil and condensate at about the 3200-foot level.[2]

HIGH pressure gas wells drilled by the Marland Production Co., west and north of the Rhodes, have indicated the northerly extension into New Mexico of the sub-surface lime ridge along which "gusher" oil accumulation has taken place in Winkler county, Texas. None of these wells, however, have passed below the heavy gas horizon and the future will have to show whether oil has accumulated at lower levels.

Marland Production Co.'s No. 1 Eaves, in 19-26S-37E, southwest of the Rhodes well, is still fishing for two strings of tools in the hole at 3000 feet. Gas testing 106,000,000 cubic feet daily at its maximum was killed in deepening this test. North of it about 10 miles and approximately a half mile from the inland town of Jal, in 19-25S-37E, the Sholes test of the Marland Production Co. was running 6-inch at 2933 feet. There had been no oil showing and the gas volume had decreased from 50,000,000 to about 10,000,000 cubic feet daily.

The status of other Lea county test wells follows:

Bordages et al. No. 1 Hughes, 27-19S-38E, running 8-inch casing at 3535 feet;

Midwest Refining Co.'s No. 1 Farnsworth, 12-26S-37E, drilling in salt at 1680 feet;

A. D. Morton's No. 1 State, 32-11S-38E, standing;

C. E. Reynolds Drilling Co.'s No. 1 Anderson, 29-13S-37E, water sand at 1620-1630;

The Texas Production Co.'s No. 1 Cagle, 9-26S-37E, building road to location;

The Texas Production Co.'s No. 1 Moberly, 17-26S-37E, building road to location;

The Texas Production Co.'s No. 1 Sheppard, 6-26S-37E, spudding;

Marland Production Co.'s No. 1 Danciger, 7-23S-36E, rigging up and building road;

Marland Production Co.'s No. 1 Lynn, 26-35S-36E, digging cellar and building road.

Three additional locations have been made by Marland Producing Co. for tests in Lea county. They are No. 1 State, in 32-11S-38E; No. 1 Brooks, in 8-20S--33E; and No. 1 King, in 26-25S-32E.

When drilled, the new tests of the Marland interests will complete their contract with the California Co., Rocky Mountain and Texas subsidiary of the Standard Oil Co. of California, for 10 free wells to be put down on New Mexico acreage in which the latter bought an interest.

1—NATIONAL PETROLEUM NEWS, page 35, July 18, 1928.
2—NATIONAL PETROLEUM NEWS, pages 24-26, July 4, 1928, which issue also carries map showing locations of various southeastern New Mexico tests.

Building stock tank at Empire Gas & Fuel Co.'s Lea county, N. M., well

20,000-Barrel Well Focuses Spotlight On New St. Louis Pool

TULSA, Aug. 11

ALREADY apprehensive over the potentialities of the St. Louis pool in eastern Pottawatomie county, oil men added amazement to apprehension when the reports began to trickle in regarding the Independent Oil & Gas Co. No. 1 Youts well which came in Aug. 8.

The first 24 hours the well produced 20,246 barrels of high gravity crude oil. Friday morning's gauge showed a production of 18,045, and Saturday morning found 17,300 barrels more above ground. The well, located in the NW NE SE of section 19-7N 5E, is a direct east offset to the T. B. Slick, Inc. No. 1 Hembree, the first big Wilcox well in the St. Louis area.

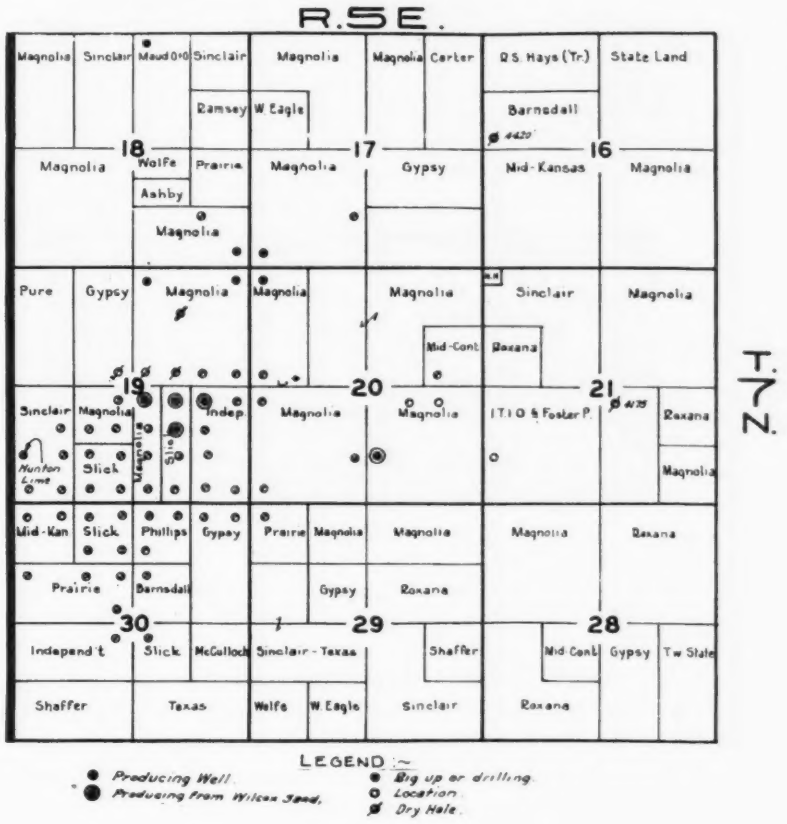
While the Independent well is the most talked of producer in the Mid-Continent, it is sharing the limelight with a rank wildcat in Kansas. This well, the Gypsy Oil Co. et al No. 1 Wright, located eight miles north of Wichita, found pay in the Wilcox to the extent of some 1500 barrels per day initial production.

These two almost crowded the Little River development out of the picture.

Almost—but not quite. At midnight Aug. 11 nearly 40 wells in the south extension of the Little River member of the greater Seminole family of oil fields were to start a last mad dash for the sand. Under agreements covering the development of the south Little River area, these wells were drilled to within striking distance of the sand and shut down. These wells now are to be produced to capacity until August 15. Then the 1600 barrels per 80-acre tract, or 800 barrels per 40 acres, production agreement becomes effective until the middle of September. It is estimated by oil men of Tulsa that the gauge for the 24 hours ending the morning of August 15 will show nearly 75,000 barrels from the entire Little River pool.

The St. Louis pool situation is becoming serious from more than one angle. It is outside any restricted area, and all wells are being produced to capacity. The drilling wells are going down as fast as possible. In fact, lack of facilities for handling the oil, is all that is delaying the bringing in of several more wells at once.

The Independent has two wells which, according to reports from the field, are just itching to come in. They are the Nos. 2 and 3 Youts, the former an east offset and the latter a south offset to the big No. 1. Both are making some oil in the Simpson, the formation directly on top of the Wilcox sand.



Production of 41,260 barrels daily was taken from the five Wilcox sand wells ringed on this map. The well shown as drilling on the Independent lease will be in as soon as it is thought possible to care for the oil.

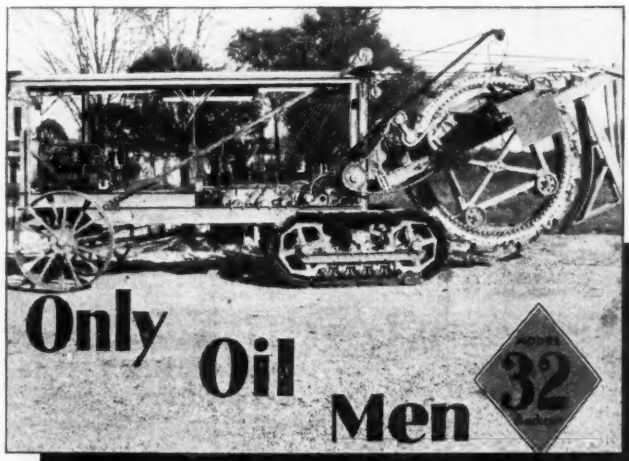
The limit of present pipe line capacity is being rapidly approached. The present facilities can handle a maximum of 86,000 barrels a day from the entire St. Louis pool. The Sinclair Pipe Line Co. is the largest purchaser in the field, with a capacity of about 40,000 barrels daily.

The Prairie Pipe Line Co. and the Magnolia Pipe Line Co. each can handle 20,000 barrels daily apiece. The Roxana Petroleum Corp. lines can care for about 4000 barrels a day. The Consolidated Pipe Line Co., a subsidiary of the Pierce Petroleum Corp., has a small line in the field which can take care of about 2000 barrels per day. The Oklahoma Pipe Line Co. is now laying a 6-inch line into the field, which will care for 12,000 barrels a day.

Production in the St. Louis pool from formations other than the Wilcox—i. e. the Hunton lime, Viola lime and the Simpson—is averaging well over 20,000 barrels per day. The Wilcox, which at present has five wells, four of which are offsets to each other, has made over 40,000 barrels per day for the last two days, giving the field as a whole nearly 65,000 barrels of production per day—within easy striking distance of the pipe line capacity.

Of course, the wells of T. B. Slick and the Magnolia Petroleum Co. have fallen off somewhat as a result of the lessening of pressure because of the Independent's gusher. Saturday morning's gauge on these Wilcox wells gave the Independent No. 1 Youts 17,300 barrels, the Magnolia No. 1 Hembree 6458 barrels, of which 2 per cent was cut. T. B. Slick No. 1 Hembree 6735 barrels, Slick No. 2 Hembree, 7360 barrels, and the Magnolia No. 1 Fyke, which had been deepened during the week to 4274 feet, made 3407 barrels. While opinion is not as yet unanimous, it is generally felt that this well is actually producing from the Wilcox and not the Simpson, as some have maintained.

Until production declines sufficiently, or the pipe line capacity is in-



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creased, operators will probably be cautious in the matter of bringing in wells which might result in swamping the pipe lines, with a resultant enforced proration.

A meeting attended by Seminole operators last week was held to discuss methods by which further development of the St. Louis area might be curtailed. At that time the Independent had not brought in its big well, so that T. B. Slick and the Magnolia were the only producers in the field with Wilcox production.

It has been an often expressed sentiment that the St. Louis area should be classed with the Greater Seminole field, despite the fact that, until comparatively recently, there have been no wells of major importance in the pool. T. B. Slick said he was willing to cooperate in any way that would be fair to all concerned, so long as his discovery rights were preserved.

According to Ray M. Collins, umpire of the entire Seminole oil producing district, Mr. Slick has expressed himself as being willing to shut in his wells if drilling wells were shut down for a like period of time regardless of whether they were on top of the sand or not. While the Magnolia was not represented at the meeting, this company has always concurred in whatever conservation methods other operators in the field have found agreeable. The Magnolia owns by far the largest amount of acreage in the new Wilcox area.

A motion was passed at the meeting asking the advisory committee to work out a plan whereby all "outside" pools might be brought under some restrictive plan. These pools consist of, primarily, the St. Louis pool, the Mission pool of Twp. 8N-5E, and the Barnsdall pool of Twp. 8N-6E.

At present there are six producing and eight drilling wells in the last named two pools and 70 drilling wells in the area of Wilcox sand production of the St. Louis pool. A meeting of operators is scheduled for August 14, at which the Mission pool future development will be discussed. The date at which the general situation will be thrashed out has not been definitely set, but according to Umpire Collins, it probably will be some time during the coming week.

If the writer has given the impression that the crude situation in Oklahoma is becoming serious he has not exaggerated. Greater Seminole is still producing about 240,000 barrels of high gravity oil a day. The Little River production, even under the 1600 barrels per 80 acre plan, is certain to mount considerably over its present figure of 42,000 barrels daily. The St. Louis pool, but a township west of the Little River field, and producing from the same sand, must of necessity be considered an integral part of the greater Seminole group. It is entirely within reason to believe that, unless drastic steps are taken to

curb these two fields in particular, it is not unlikely that a gauge of Seminole will again reach as high as 400,000 barrels.

Oil men are unanimous in expressing the hope that, by the middle of next month, when the Little River restrictions will be lifted to the extent of 125,000 barrels for the entire Little River pool, that a plan state-wide in its control of the flush areas will be ready for application. Such a plan, covering all flush fields in Oklahoma, will have to be worked out under the approval of the Oklahoma Corporation Commission. Such a plan is thought to be necessary to avert a deluge of oil such as was experienced by the industry a year and a half ago.

The older members of the Seminole group have not been inactive during the week. The Burke-Greis et al No. 1 Williams, in the SW NE of 6-9N-6E, an east extension of the Earlsboro field, topped the Wilcox sand at 4353 feet, penetrating to 4363. Production the first seven hours was 750 barrels. The well was shot with 20 quarts Friday afternoon, responding with a production of 145 barrels per hour. A brief report from the field Saturday noon said that the well had caught fire, the rig being burned. Whether or not the well itself was afire was not learned.

Another fire was reported at the same time from the Little River district. The Texas Co.-Independent No. 2 Hotulke, in Sec. 23-7-6, was reported to be the center of a fire of oil which had been spilled on the ground when the well came in accidentally, and before it had been shut in. The well itself has not caught fire, nor was the rig burned though both are reported to be in danger.

The Kansas wildcat of the Gypsy Oil Co. et al, the No. 1 Wright, in the SE NE SE of section 12-26S-1W, eight miles north of Wichita has aroused Kansas oil circles to fever heat. The "al" in this case is the Marland Production Co. and the Bu-Vi-Bar Petroleum Corp. While it has not definitely been determined, it is the opinion of those who claim to know that the production is coming from the Wilcox sand. If this is the case, it is the only Wilcox production in any direction for many miles. The oil is of a high gravity, and will be refined at Wichita.

Whether or not the well is the forerunner of a large field need not worry economists, as the location is on a 3500-acre core drilled structure controlled by the discoveries.

A single contractor in the United States, carrying air mail, handles more mail and express every month in actual tonnage than is carried by all commercial lines in Germany entering the Berlin airport.

LOS ANGELES, Aug. 11.—Irving Augur, president of Bolsa Chica Petroleum Corp., recently returned from several weeks spent at New York and other eastern points.

Drilling Operations in Oklahoma and Kansas, Week Ended August 11, 1928

	August 11 Loc.	Rigs	Drg.	S.D.	Week Ended Total	Aug. 4 Loc.	Rigs	Drg.	S.D.	Total
OKLAHOMA										
Burbank										
Other Osage	5	5	24	3	37	5	5	33	3	46
Bristow-Cushing	4	7	34	8	53	6	3	35	7	51
North Oklahoma	6	3	50	31	90	7	4	52	32	95
South Oklahoma	9	14	79	27	129	9	13	78	34	134
Muskogee	..	9	43	23	75	..	5	47	24	76
Okmulgee-Bristow	15	30	63	22	130	14	30	55	22	121
Seminole Dist	24	64	328	12	444	34	84	298	21	437
Total Oklahoma	63	132	621	142	958	75	144	598	143	960
KANSAS	*87	...	158	74	319	*87	...	155	72	314
GRAND TOTAL	150	132	779	216	1,277	162	144	753	215	1,274

*Location and Rigs combined.

Seminole District Production by Companies and Leases, August 8 and August 1, 1928

BOWLEGS

Company	Farm	S.T.R.	Aug. 8 Wells	Aug. 8 Prod.	Aug. 1 Wells	Aug. 1 Prod.
Amerada	Rascoe	15- 8-6	8	1,290	8	1,320
Atlantic	Baker	1- 8-6	4	450	4	515
Atlantic	Fleet	23- 8-6	3	170	3	225
Atlantic	Grayson	21- 8-6	4	715	4	908
Atlantic	A. Jones	10- 8-6	2	70	2	49
Atlantic	C. Jones	9- 8-6	1	120	1	140
Total Atlantic			14	1,525	14	1,839
Barnsdall	McNac	28- 8-6	1	17	1	18
Barnsdall	Murrow	11- 8-6	4	684	4	665
Total Barnsdall			5	701	5	683
Carter	Bowlegs	15- 8-6	4	1,165	4	1,105
Carter	Burden	23- 8-6	2	80	2	35
Carter	Harjoche	15- 8-6	6	520	6	620
Carter	Hilly	23- 8-6	3	710	3	800
Carter	Jones	11- 8-6	4	640	4	765
Carter	McGeisey	21- 8-6	1	10	1	10
Carter	Walker	15- 8-6	4	520	4	370
Carter	Wise	23- 8-6	11	1,745	11	1,985
Total Carter			35	5,390	35	5,690
Dixie	Culley	11- 8-6	1	95	1	65
Empire	Lacey	14- 8-6	6	458	6	594
Empire	Wise	23- 8-6	2	317	2	327
Total Empire			8	775	8	921
Gypsy	Baby	6- 8-6	1	0	0	0
Gypsy	Bowlegs	22- 8-6	1	220	1	210
Gypsy	Barkus	6- 8-6	1	1,292	0	0
Gypsy	Bradley	8- 8-6	1	2	1	3
Gypsy	Cumsey	8- 8-6	4	810	4	907
Gypsy	Dosar	7- 8-6	1	100	1	100
Gypsy	Grayson	13- 8-6	4	287	4	977
Gypsy	Harjoche	10- 8-6	3	1,080	3	1,052
Gypsy	Henderson	13- 8-6	1	2	1	70
Gypsy	Jones	11- 8-6	1	87	1	68
Gypsy	Mission	5- 8-6	1	50	1	50
Gypsy	Mosar	1- 8-5	1	50	1	
Gypsy	Walker	15- 8-6	7	1,252	7	1,220
Gypsy	Wise	23- 8-6	2	145	2	250
Total Gypsy			29	5,377	27	4,907
I. T. I. O.	Barnett	23- 8-6	2	339	2	355
I. T. I. O.	Barnett-B	24- 8-6	1	167	1	178
I. T. I. O.	Billington	22- 8-6	5	457	5	495
I. T. I. O.	Bowlegs	22- 8-6	10	1,566	10	1,523
I. T. I. O.	Davis	22- 8-6	4	1,011	4	985
I. T. I. O.	Fay	13- 8-6	9	2,071	9	2,109
I. T. I. O.	Goforth	15- 8-6	12	1,130	12	1,253
I. T. I. O.	Livingston	15- 8-6	10	2,561	10	2,582
I. T. I. O.	Lizzie	13- 8-6	3	291	3	312
I. T. I. O.	Walker	15- 8-6	8	898	8	1,017
I. T. I. O.	Williams	12- 8-6	1	172	1	188
I. T. I. O.	Wilmott	15- 8-6	4	226	4	220
I. T. I. O.	Work	24- 8-6	1	118	1	124
I. T. I. O.	Youngblood	24- 8-6	2	27	1	113
Total I. T. I. O.			72	11,034	72	11,454
Magnolia	Davis	13- 8-6	3	500	3	522
Magnolia	Davis-M	13- 8-6	1	234	1	214
Magnolia	Hammond	10- 8-6	7	849	7	982
Magnolia	Rhodes	12- 8-6	6	2,194	6	2,399
Magnolia	Van Buskirk	9- 8-6	1	161	1	315
Total Magnolia			18	3,938	18	4,432
Marland	Maines	7- 8-6	1	0	1	0
McCulloch	Bowlegs	22- 8-6	2	345	2	255
Mid-Continent	Baker	10- 8-6	4	763	4	856
Mid-Continent	Bowlegs	22- 8-6	1	5	1	
Mid-Continent	Smith	12- 8-6	6	420	6	365
Total Mid-Continent			11	1,188	11	1,221
Minnehoma	Bowlegs	15- 8-6	4	351	4	300
Prairie	Gahagan	23- 8-6	4	350	4	320
Prairie	Harber	10- 8-6	8	2,690	8	2,360
Prairie	Jones	11- 8-6	4	445	4	455
Prairie	Templeton	12- 8-6	6	1,665	6	1,845
Prairie	Whitney	23- 8-6	4	765	4	640
Total Prairie			26	5,915	26	5,620
Pure	Reed	14- 8-6	14	3,577	14	3,852
Pure	Strother-D	14- 8-6	4	344	4	393
Pure	Strother-F	10- 8-6	7	2,189	7	2,182
Total Pure			25	6,110	25	6,427
Roxana	Taylor	16- 8-6	5	132	5	119
Shaffer	Lacy	14- 8-6	3	313	3	300
Sinclair	Bowlegs	22- 8-6	1	15	1	35
Sinclair	Cumsey	10- 8-6	4	1,800	4	1,839
Sinclair	Ellen	11- 8-6	7	935	7	943
Sinclair	Harjo	14- 8-6	3	807	3	685
Sinclair	Jones	10- 8-6	7	905	7	923
Sinclair	Taylor	10- 8-6	4	1,713	4	1,776
Sinclair	Taylor-W	10- 8-6	3	758	3	801
Sinclair	Walker	22- 8-6	4	450	4	927
Total Sinclair			33	7,383	33	7,929
Slick	Jones	3- 8-6	1	538	1	57
Texas	Reed	14- 8-6	11	1,505	11	1,570
Tidal	Grayson	13- 8-6	4	260	4	195
Tidal	Harjoche	10- 8-6	6	1,615	6	1,560
Total Tidal			10	1,875	10	1,755
Twin State	Hays	8- 8-6	1	50	1	5
Twin State	Jones	11- 8-6	2	10	3	10
Total Twin State			3	60	4	15
TOTAL BOWLEGS			325	55,840	325	56,879

(Continued on Page 42)

Seminole District Production by Companies and Leases, August 8 and August 1, 1928

(*Continued from Page 41*)

EARLSBORO

Company	Farm	S.T.R.	Aug. 8 Wells	Aug. 8 Prod.	Aug. 1 Wells	Aug. 1 Prod.
Amerada	Anderson	15- 9-5	2	815	2	794
Amerada	Cowden	4- 9-5	7	1,563	7	1,629
Amerada	Rogers	3- 9-5	2	331	2	454
Total Amerada			11	2,709	11	2,877
Atlantic et al	Foreman	18- 9-5	1	150	1	149
Barnsdall	Brown	10- 9-5	4	2,629	4	3,019
Bransdall	F. Bruner	2- 9-5	2	797	2	724
Barnsdall	N. Bruner	10- 9-5	3	1,384	3	1,540
Barnsdall	Cudjo	14- 9-5	1	25	1	26
Barnsdall	D. Davis	11- 9-5	3	269	3	218
Barnsdall	J. Davis	11- 9-5	4	1,206	4	1,334
Barnsdall	M. Davis	11- 9-5	3	71	3	70
Barnsdall	Gibson	9- 9-5	8	2,321	8	2,281
Barnsdall	Hern	15- 9-5	1	2	1	2
Barnsdall	Ingram	1- 9-5	8	1,403	8	992
Barnsdall	Pack	10- 9-5	4	147	4	188
Barnsdall	Peter	10- 9-5	4	127	4	104
Barnsdall	Sango	1- 9-5	4	4,579	5	5,950
Barnsdall	Sebolka	15- 9-5	1	211	1	406
Barnsdall	H. Sullivan	11- 9-5	1	10	1	..
Barnsdall	Sull-Harjo	10- 9-5	2	42	2	41
Barnsdall	Watsutke	12- 9-5	4	870	4	1,083
Total Barnsdall			57	16,093	58	16,978
Carter	Davis	13- 9-5	2	960	2	220
Carter	James	6- 9-6	1	45	0	0
Carter	Sango	1- 9-5	4	415	4	455
Total Carter			7	1,420	6	675
Continental	Kays	2- 9-5	2	85	2	65
Continental	Spencer	12- 9-5	4	1,160	4	1,335
Total Continental			6	1,245	6	1,400
Empire	Barker	12- 9-5	1	...	1	...
Empire	Edmundson	3- 9-5	3	138	3	118
Total Empire			4	138	4	118
Gypsy	Bora	16- 9-5	1	...	1	...
Gypsy	Bruner	10- 9-5	4	2,832	4	2,975
Gypsy	B. Carter	11- 9-5	9	4,377	9	4,182
Gypsy	Earl	16- 9-5	1	17	1	17
Gypsy	Hunick	5- 9-5	1	2,127	1	2,122
Gypsy	Noble	12- 9-5	4	2,250	4	2,120
Gypsy	Peter	10- 9-5	3	352	3	335
Gypsy	Sango	1- 9-5	8	4,820	6	2,355
Gypsy	State	16- 9-5	4	782	4	807
Total Gypsy			35	17,557	33	14,913
Independent	Bruner	10- 9-5	3	145	3	47
Independent	Sullivan	10- 9-5	2	52	2	40
Independent	Knapp	8- 9-5	3	1,945	3	2,004
Indep.-Margay	Gaines	11- 9-5	4	635	4	710
Total Independent			12	2,777	12	2,801
Magnolia	Bryant	9- 9-5	6	432	6	594
Magnolia	Cowden	4- 9-5	4	38	4	45
Magnolia	Dixon	12- 9-5	1	30	0	0
Magnolia	Edmundson	3- 9-5	3	21	3	20
Magnolia	Holmsley	11- 9-5	7	611	7	659
Magnolia	Hyde	13- 9-5	1	1,584	1	1,576
Magnolia	Ingram	10- 9-5	1	25	1	25
Magnolia	Lena	10- 9-5	3	56	3	55
Magnolia	Seay	12- 9-5	9	3,275	9	2,285
Magnolia	Simpson	10- 9-5	3	90	3	90
Magnolia	Sparks	11- 9-5	7	913	7	915
Magnolia	Sullivan	12- 9-5	3	100	3	84
Total Magnolia			48	7,175	47	6,085
Mid-Continent	McCumber	9- 9-5	7	100	7	90
Mid-Kansas	Anderson	14- 9-5	3	75	3	80
Phillips	Dunnaway	14- 9-5	1	25	1	30
Prairie	Baker	24- 9-5	1	50	1	50
Prairie	Davis	13- 9-5	5	3,235	5	3,095
Prairie	C. Graham	3- 9-5	2	15	2	15
Prairie	O. Graham	10- 9-5	4	1,385	4	1,290
Prairie	Stidham	11- 9-5	13	2,905	13	3,835
Total Prairie			25	7,590	25	8,285
Roxana	Bayliss	17- 9-5	1	14	1	13
Roxana	Hearn	13- 9-5	1	234	1	36
Roxana	Spencer	12- 9-5	2	1,251	2	1,346
Total Roxana			4	1,499	4	1,395
Shaffer	Clark	1- 9-5	3	585	3	449
Sinclair	Foreman	18- 9-5	1	15	1	15
Sinclair	Hollins	12- 9-5	1	50	1	30
Sinclair	Sango	2- 9-5	4	3,540	4	3,250
Total Sinclair			6	3,605	6	3,295
Skelly	Sherry	6- 9-5	1	3,308	1	582
Skelly	Spencer	12- 9-5	1	459	1	3,540
Total Skelly			2	3,767	2	4,122
Superior	Ingram	1- 9-5	2	372	1	0
Superior	Walker	2- 9-5	1	3,431	1	3,093
Total Superior			3	3,803	2	3,093
Texas	Anderson	2- 9-5	8	575	8	555
Texas	Texas Brown	10- 9-5	8	330	8	475
Texas	Rogers	5- 9-5	4	2,595	4	2,785
Texas	Wilmott	10- 9-5	7	550	7	495
Total Texas			27	4,050	27	4,310
Tidal	Watkins	9- 9-5	7	3,015	7	3,175
Twin State	Barker	12- 9-5	2	56	2	90
Twin State	Hern	2- 9-5	4	350	4	388
Total Twin State			6	406	6	478
TOTAL EALRSBORO			275	77,784	273	75,061

LITTLE RIVER

Company	Farm	S.T.R.	Aug. 8 Wells	Aug. 8 Prod.	Aug. 1 Wells	Aug. 1 Prod.
Amerada	Nitey	2- 7-6	3	1,405	3	1,455
Amerada et al	Fore	35- 8-6	2	390	2	405
Total Amerada			5	1,795	5	1,860
Barnsdall	Hotulke	22- 7-6	1	32	1	33
Blackwell	Bohen	11- 7-6	3	1,585	0	0
Blackwell	Nitey	35- 8-6	6	2,225	6	2,268
Total Blackwell			9	3,810	6	2,268
Carter	Fish	36- 8-6	6	880	6	960
Carter	Larney	24- 7-6	1	100	1	100
Carter	Jackson	11- 7-6	3	3,555	2	1,700
Carter	Moore	11- 7-6	1	2,325	1	675
Carter	Wilson	12- 7-6	1	100	1	100
Total Carter			12	6,960	11	3,535
Continental	Cosar-M	25- 8-6	1	85	1	85
Continental	Cosar	36- 8-6	5	1,240	5	1,550
Gypsy	Brown	33- 8-6	1	2,640	1	2,645
Gypsy	Conard	22- 7-6	1	100	1	100
Gypsy	Campbell	36- 8-6	2	200	2	210
Gypsy	Denmark	11- 7-6	1	100	1	100
Gypsy	Cosar-M	25- 8-6	1	20	1	42
Gypsy	Mungee	1- 7-6	1	25	1	27
Gypsy	Cosar W	36- 8-6	1	370	1	390
Gypsy	Hulhoke	14- 7-6	1	100	1	100
Gypsy	Pottie	35- 8-6	4	1,120	4	966
Gypsy	Renton	11- 7-6	3	2,035	3	2,160
Total Gypsy			16	6,710	16	6,740
Independent	Harris	23- 7-6	2	200	2	200
Independent	Davis	2- 7-6	3	1,520	3	1,835
Total Independent			5	1,720	5	2,035
I. T. I. O.	Campbell	1- 7-6	1	267	1	252
I. T. I. O.	Dungan	35- 8-6	3	1,350	3	1,414
I. T. I. O.	MA House	1- 7-6	1	41	1	72
I. T. I. O.	WE House	1- 7-6	1	64	1	87
I. T. I. O.	WE House-B	2- 7-6	4	1,410	4	1,447
I. T. I. O.	Hull	26- 8-6	2	1,441	2	1,527
I. T. I. O.	Jackson	1- 7-6	3	931	3	947
I. T. I. O.	McCulla	1- 7-6	3	710	3	678
I. T. I. O.	Nitey	2- 7-6	6	463	6	516
I. T. I. O.	Phoebe-A	36- 8-6	3	436	3	506
I. T. I. O.	Phoebe-B	36- 8-6	4	210	4	237
I. T. I. O.	Reed	1- 7-6	1	41	1	61
I. T. I. O.	Soketheche	1- 7-6	3	673	3	710
Total I. T. I. O.			35	8,037	35	8,454
Magnolia	Cruse	2- 7-6	4	1,304	4	1,272
Magnolia	Dixon	31- 8-7	1	9	1	0
Magnolia	Harjo	14- 7-6	1	0	1	0
Magnolia	Pottie	35- 8-6	3	458	3	792
Magnolia	Reed	22- 7-6	1	100	1	100
Total Magnolia			10	1,871	10	2,164
Mid-Continent	Bruner	11- 7-6	1	100	1	100
Mid-Cont.	Smith	5- 7-7	1	70	1	70
Mid-Cont.	Wadsworth	36- 8-6	7	670	7	755
Total Mid-Continent			9	840	9	925
W. B. Pine	Hoyecha	26- 8-6	2	990	2	870
Pine et al	Pottie	36- 8-6	2	497	2	430
Total Pine			4	1,487	4	1,300
Pure	Harjo	11- 7-6	2	4,881	2	3,979
Prairie	Chilcoat	25- 8-6	3	1,525	3	1,265
Prairie	Dungan	35- 8-6	1	35	1	30
Prairie	House	2- 7-6	4	855	4	945
Prairie	Talley	14- 7-6	1	0	0	0
Total Prairie			9	2,415	8	2,240
Reiter-Foster	Bunyard	14- 7-6	2	100	1	100
Roxana	Caesar	11- 7-6	1	214	1	214
Roxana	Hotulke	23- 7-6	1	101	1	99
Shaffer	Narcome	36- 8-6	1	50	1	48
Sinclair	Cosar	36- 8-6	3	2,185	3	2,310
Sinclair	Teewee	14- 7-6	1	100	1	100
Total Sinclair			4	2,285	4	2,410
Slick	Williams	15- 7-6	1	100	1	100
Snowden-McS	Tiger	13- 7-6	1	0	1	0
Superior	Soketheche	1- 7-6	1	10	1	10
Texas	Coker	1- 7-6	3	1,010	1	100
Texas	Hotulke	23- 7-6	1	116	3	1,070
Total Texas			4	1,126	4	1,170
Tidal	House	1- 7-6	3	580	3	600
Tidal	Johnson	1- 7-6	1	35	1	35
Total Tidal			4	615	4	635
Twin State	Lowe	25- 8-6	1	180	1	180
TOTAL LITTLE RIVER			144	46,664	138	42,134

SUMMARY

	Aug. 8 Wells	Aug. 8 Prod.	Aug. 1 Wells	Aug. 1 Prod.
TOTAL BOWLEGS	**325**	**55,840**	**324**	**56,879**
TOTAL EARLSBORO	**275**	**77,784**	**273**	**75,061**
TOTAL SEMINOLE	**294**	**50,356**	**138**	**49,884**
TOTAL SEARIGHT	**69**	**12,279**	**29**	**13,146**
TOTAL LITTLE RIVER	**144**	**46,664**	**138**	**42,134**
GRAND TOTAL SEMINOLE AREA	**1,107**	**242,923**	**1,102**	**237,104**
Average per well		**219**		**215**

100 Wells to Drill for Santa Fe Springs Deep Sand by September 1

By Wm. E. Green
N. P. N. STAFF WRITER

LOS ANGELES, Aug. 11

SANTA FE SPRINGS, at the close of the week, was in the throes of frenzied activity. Rig builders are working night and day. Steel rig manufacturers have speeded up their plants to catch up with orders.

Locations, rigs and drilling wells totaled very close to 100 at the end of the week and, if the field forces of the interested oil companies have anything to do with it, at least 100 wells will be drilling for the deep sand not later than Sept. 1.

This drilling campaign was started when Wilshire Oil Co. completed a well good for about 2500 barrels pinched down at slightly short of 6000 feet. This well is holding up, according to general information, although Wilshire officials continue to refuse to make public any information.

Five wells are drilling, two holes being redrilled and three old wells drilling deeper, in addition to approximately 75 actual locations and rigs.

Wilshire is drilling two wells and will have four more strings of tools running next week. General Petroleum has made 24 locations, activity being reported at 15 of the number. Union Oil is preparing to start 8 strings as quickly as possible, while The Texas Co. has already decided to drill at least 14 holes. Standard is drilling two wells, in addition to announcing five locations. Shell Co., Associated and George Getty have also made a number of locations.

The major companies are taking the lead in the number of wells starting. This is due to their large acreage, which in many instances adjoins

Completions in Oklahoma and Kansas, Week Ended August 11, 1928

OKLAHOMA

Carter County

Company	Well No.	Location	Depth	Init. Prod.
Hall-Briscoe	2	NW NE SW 29-1-3 W	3145-3227	105
Magnolia	3	SE NE NW 23-1-3 W	2290-2400	85
Magnolia	2	NWc NE 11-2-3 W	T.D. 4000	Dry
Magnolia	1	NW SW NE 11-2-3 W	T.D. 4695	Dry

Comanche County

Stevens et al	1	C SE 27-2-12 W	T.D. 1209	Dry

Cotton County

Everts et al	1	SWc NW NE 11-5-13 W	T.D. 2318	Dry
Moore et al	1	SWc NE 2-2-10 W	2152-2160	50

Creek County

Winemiller et al	1	NE SW SW 5-16-10 E	2307-2341	10
Ireland	3	NE SW NW 11-17-10 E	T.D. 1995	Dry
Markham	4	NWc SW NW 20-17-7 E	T.D. 2885	Dry

Garfield County

Champlin et al	1	NWc SE 24-24-3 W	T.D. 4185	Dry
Fagar	1	SEc 14-24-3 W	T.D. 4767	Dry

Grady County

Kahl et al	2	NE SE NE 14-4-8 W	2176-2285	40M

Hughes County

Magnolia	1	NW NE SW 21-7-8 E	3050-3095	70

Jefferson County

McGinley et al	3	SWc SE SW SE 17-7-5 W	765-792	20
Lesh-McCall	6	SEc SW SW SE 17-7-5 W	768-790	20
Lesh-McCall	5	SWc NE SW SE 17-7-5 W	785-806	15
Bridwell et al	1	NW SW NE 10-7-6 W	T.D. 2207	Dry

Johnston County

Franklin	1	SWc NW 35-4-4 E	T.D. 1375	Dry

Kay County

Nehr-Wilson	1	SEc NW 20-27-1 E	T.D. 925	Dry
Balph et al	1	SEc NW 18-29-1 W	T.D. 4048	Dry

Logan County

Barnsdall	1	NEc SW 19-19-4 W	T.D. 4450	Dry

Mayes County

Bradley et al	1	NWc NE 3-21-18 E	T.D. 270	Dry

Muskogee County

Ransome et al	1	CEL NW NE 1-13-18 E	T.D. 1646	Dry
Haney	1	C NE SE 17-14-20 E	945-960	2M

Noble County

Mid-Co	6	NW SW NE 29-24-1 W	T.D. 2020	OWD Dry

Okmulgee County

Bettie Gene	1	SEc NE NE 19-13-14 E	T.D. 450	Dry
Denton-Marshall	2	SWc NW 30-15-13 E	T.D. 2140	Dry
Pine	3	C NE NE 30-12-13 E	1149-1193	.75M
Lambert	1	CEL NW SW 7-13-15 E	1234-1250	6
Hazlett	6	SE NW SE 2-13-14 E	1963-1973	3.5M
Riney et al	4	NEc SW 9-14-14 E	1246-1256	15
Kirkland et al	9	CEL NE NE SW 17-15-13 E	1340-1364	9

Osage County

Okla. Natural	787	NEc NW NE SE 10-21-10 E	1570-1591	.24M
Moore-Ohio Osage	6	NEc SW SW 9-21-9 E	388-398	2
I. T. I. O.	393	NE SE SE 29-23-9 E	885-905	.25M
I. T. I. O.	397	SEc SW NE SW 4-23-9 E	535-550	3.75M
Winona	24	SE NE SE 28-24-10 E	1300-1374	8
Peters et al	2	NE SE NE 27-25-9 E	2184-2240	25
Kewanee	8	SE NW SE 34-27-6 E	2762-2837	68
Ross	8	NE SW NW 14-29-11 E	1012-1062	5
Continental	1	SWc SE 32-24-8 E	T.D. 2689	Dry

Pontotoc County

Ramsey	4	SEc 18-5-8 E	2583-2598	OWD 350
Homaokla	4	SE SW NW 17-5-8 E	2348-2359	70

Pottawatomie County

Magnolia	1	SWc NE 19-7-5 E	3930-3985	50
Magnolia	2	SE NW NE 19-7-5 E	4260-4420	12
Magnolia	2	NEc 15-7-4 E	3922-4065	12
Gypsy	1	SE NE SW 24-9-5 E	T.D. 4433	Dry

Seminole County

Anderson-Pritchard	4	NWc SE 18-5-8 E	2545-2645	500
Mid-Continent	2	NE SE NE 14-5-7 E	2581-2591	107
Sinclair	1	SW NW NW 13-5-7 E	2658-2672	5M
Continental	1	SEc SW 25-8-6 E	4391-4396	375

Stephens County

Muse	2	SWc SE 1-2-8 W	2130-2153	50
Magnolia	7	SEc NW NE 34-1-8 W	1941-1949	40
Big Twelve	9	CWL E½ SE SW 27-1-8 W	1390-1400	10
Franklin	1	SWc NE 12-1-4 W	3252-3276	75
Medlin et al	1	NE SE NE 27-2-8 W	T.D. 2500	Dry
Magnolia	2	NEc NW NW NE 12-2-5 W	T.D. 2370	OWD Dry
Beaver	1	SWc NW NE NE 30-1-8 W	T.D. 2040	Dry
Atlantic	1	NE SW NE 25-1-4 W	T.D. 3282	Dry

Tulsa County

Pine	1	CSL SE SE 9-16-14 E	T.D. 1727	Dry
Commercial Drlg	1	SWc NE 24-18-12 E	T.D. 2188	Dry
Underwood et al	5	CEL SE NW 30-19-12 E	T.D. 1585	Dry

Wagoner County

Creighton	4	NW NE SW 22-18-17 E	T.D. 330	Dry

KANSAS

Barber County

Shaffer et al	1	C SW 19-33-12 W	T.D. 6185	Dry

Butler County

Dixie	1	SE SW SE 28-27-6 E	3055-3063	100

Cowley County

Elliott	1	SEc 18-31-5 E	482-492	.78M
Roth-Faurot	1	NEc SW 31-32-6 E	2440-2447	2M
Hull	1	SE SW SW 13-32-4 E	T.D. 3455	Dry

Chautauqua County

Union	1	NEc NW 2-32-10 E	T.D. 2060	Dry
Page Bros	1	CNL SW NW 18-32-10 E	2338-2355	25

Elk County

Sonner	1	SWc 10-31-10 E	1153-1170	.52M
Denman Bros	4	SEc NE SW SE 35-31-10 E	1662-1693	.6M

McPherson County

Sinclair	1	C NE SE 31-18-2 W	2962-2990	4.5M
Polar	1	SW SE NW 20-30-3 W	T.D. 3820	Dry

Russell County

Douglas	1	C E½ 25-14-11 W	T.D. 3503	Dry

Sumner County

Champlin	4	SWc NW SE NW 9-30-2 W	1900-1929	.34M

Completions in N. E. Central, West, Panhandle and North Texas, Week Ended August 4, 1928

NORTH AND EAST CENTRAL

Archer County

Company	Well Farm	Location Survey	Depth	Init. Prod.
Arco	4-Perkins	Denton Co Sch. Ld.	985-1004	25
Burns et al	1-Deskin	Clark et al.	T.D. 1300	Dry
Consolidated	1-Lisle	Meade	T.D. 1438	Dry
Johnston	1-Gravey	TE&L	T.D. 851	Dry
Continental et al	1-Wilson	ATNCL	T.D. 1604	Dry
Steed et al	1-Andrews	Yearly	T.D. 910	Dry
Sun	2-Ford	Fitzgerald	T.D. 1816	Dry

Callahan County

Richards	1-Gilliland	BBB&C	T.D. 1208	Dry

Coleman County

Barnsdall	1-Aldridge	Scott	T.D. 2320	Dry
Roth et al	1-Terry	Coleman Co. Sch. Ld.	1051-1068	50

Eastland County

Rhodes	1-Henning	Van Norman	3173-3177	2440
Root et al	1-Kurklin	H&TC	3336-3387	OWD 300
Harris-Meade et al.	1-Pippin	TE&L	T.D. 1220	Dry
Rhodes	2-Henning	Van Norman	T.D. 3605	Dry
Rhodes	3-Henning	Van Norman	T.D. 3215	Dry

Jack County

Ellis et al	6-Ellis et al.	Williams	463-492	3

Jones County

Marston	1-Swan	Spears	T.D. 3235	Dry
Campbell	1-Herndon	MEP	T.D. 3009	Dry
Phillips	5-Winters	T&P	T.D. 4580	Dry
Roberts	1-Grayson	T&P	2523-2531	243
Phillips	3-Winters	T&P	2500-2509	300

Milam County

White et al	1-White	Taylor	T.D. 1367	.5M

Runnels County

Jones	1-Haile	ET	T.D. 2250	Dry

NORTH TEXAS

Brown County

Conway Bros	2-Newton	Miller	T.D. 1340	Dry
Crabb et al	1-McInnis	McMasters	T.D. 2387	Dry
Cranfill-Reynolds	1-Graham	Brown	T.D. 2190	Dry
Daniels et al	1-Miers	SA&MG	T.D. 1277	Dry
Daniels et al	2-Thomason	Berry	T.D. 903	Dry
Sawyer et al	1-Stone	Milliken	T.D. 1351	Dry
Baker-Hodges et al.	1-Miers	SA&MG	1178-1186	5
Ditto	3-Richardson	SA&MG	541-552	5
Humble	5-Eyler	T&NO	1326-1333	43
Humble	1-Hickman	Kinsey	1264-1270	3
Midland	8-Butler	Benson	1271-1290	100
Midland	3-Hickman	McGloin	1245-1260	35

Clay County

Phillips et al	1-Myers	Skeritt	T.D. 690	Dry

Wichita County

Hammon-Garrett	3-Mitchell	Lewis	T.D. 1653	Dry
Keller	1-Hamilton	Gibbs	T.D. 520	Dry
Keller	2-Waggoner	Willis	T.D. 1765	Dry
Shappell	1-Burnett	BSF	T.D. 2450	Dry
Magnolia	3-Kemp et al.	KWVFL	1218-1220	48
Omohundro	14-Pace	Scott	1226-1230	40
Texas	3-Waggoner	GC&SF	1332-1350	18

Wilbarger County

Barkley-Meadows	5-Waggoner	H&TC	1837-1842	5
Barkley-Meadows	6-Waggoner	H&TC	1846-1856	150
Consolidated	6-Waggoner	H&TC	1833-1873	312
Consolidated	7-Waggoner	H&TC	1837-1859	175
Consolidated	8-Waggoner	H&TC	1854-1873	125
Simms	2-Waggoner	H&TC	1850-1867	321
Texas	6-Waggoner	H&TC	2341-2383	1420
Waggoner Farm	3-Waggoner	H&TC	1848-1884	126
Waggoner Farm	2-Waggoner	H&TC	1863-1868	180
Waggoner Farm	4-Waggoner	H&TC	1874-1888	105
Waggoner	6-Waggoner	H&TC	2296-2310	73
Waggoner	2-Waggoner	H&TC	2292-2446	2675
Waggoner	1-Waggoner	H&TC	2252-2404	2635
Waggoner	2-Waggoner	H&TC	2263-2404	2540
Consolidated	1-Waggoner	Butler	T.D. 2451	Dry

Young County

Atlantic	4-Graham	TE&L	T.D. 854	Dry
Long et al	1-Rutherford	TE&L	T.D. 1051	Dry
McMeans	1-Bullock	TE&L	T.D. 860	Dry
Russell et al	1-Self	Rohus	T.D. 804	Dry
Kliner et al	15-Langsron	TE&L	554-578	150
Montgomery et al	1-Keen	TE&L	802-811	25
Wolfe	1-Whitehead	TE&L	879-882	65
Gwynn	1-Kunkel	BBB&C	1144-1153	55

PANHANDLE

Gray County

Texas	3-Bowers	H&GN	3075-3130	125
Danciger et al	1-Webb	H&GN	2360-2420	3M

Hartley County

Amarillo	8-Bivins	EL	2890-3015	50M

Hutchinson County

Alamosa	2-Sanford	H&TC	2990-2991	300
Gulf Prod	42-Dial	Wimberly	3034-3125	30

Moore County

Amarillo	1-Thompson	EL	2935-3398	2.5M

WEST TEXAS

Brewster County

Wilcox et al	1-Gage	TC	T.D. 2110	Dry

Crockett County

Humble	4-Powell	EL	2547-2560	570

Jeff Davis County

Humble	2-Flores	T&P	T.D. 5250	Dry

Lynn County

Exploration	1-Nevils		T.D. 3515	Dry

Pecos County

Mid-Kansas	1-Pryor et al.	TC	T.D. 3330	Dry
Mid-Kansas et al	10-Yates	I&GN	1285-1295	3729 (1 Hr.)
Roxana	6-Smith	GC&SF	1465-1602	150
Roxana	9-Smith	GC&SF	1435-1559	87 (8 Hrs.)
Simms	7-Smith	GC&SF	1169-1266	960 (1 Hr.)
McMann et al	7-Yates	GC&SF	1250-1310	620 (1 Hr.) OWD
Marland et al	11-Yates	GC&SF	1140-1240	1040 (1 Hr. OWD
Marland et al	4-Yates	GC&SF	1290-1355	190 (1 Hr.) OWD
McMann	3-Smith	GC&SF	1050-1242	270 (1 Hr.)
Gulf Prod	12-Yates	Runnels Co. Sch. Ld.	1170-1199	500 (1 Hr.)
Mid-Kansas et al	22-Yates	Yates	1347-1402	663 (1 Hr.)
Mid-Kansas et al	26-Yates	I&GN	1246-1390	723 (1 Hr.)
McMann et al	17-Yates	GC&SF	1391-1421	20 (1 Hr.)

Ward County

Rector	1-Stale	H&TC	T.D. 2311	Dry
Estes	1-Estes	PSL	T.D. 3503	Dry

Winkler County

Danciger et al	1-Sealy	GMMB&A	T.D. 3501	Dry
Southern Crude	T-88-H3-Hendricks	PSL	3040-3159	300
Southern Crude	T-88-A4-Hendricks	PSL	3870-3875	1235
Skelly	1-Hendricks	PSL	2655-2760	1868
Pure	11-Hendricks	PSL	2855-2997	1000
Pure	8-Hendricks	PSL	2690-2735	700
Pure	6-Hendricks	PSL	2935-2974	2380
Southern Crude	T-90-1-Hutchins	PSL	2467-2704	33M
Pure	1-Hendricks	PSL	2750-2752	4632
Marland	1-Hendricks	PSL	2870-2950	600
Marland	6-Hendricks	PSL	2752-2764	1200
Roxana et al	5-Hendricks	PSL	2775-2792	744 (1 Hr.)
Roxana et al	2-Hendricks	PSL	2720-2741	1400
Humble	8-Hendricks	PSL	2848-2855	275 (3 Hrs.)
Humble	9-Hendricks	PSL	2675-2678	2400
Cranfill-Reynolds	1-Hendricks	PSL	2870-2956	OWD 90
Amerada	1-Walton	PSL	2446-2502	39M

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended August 11, 1928

OKLAHOMA

Beckham County

Company	Well No. Farm	Location	
Day	1-Ault	NWc 33-8-21 W	

Caddo County

Magnolia	3-Moss	NEc NW SW 5-5-9 W	

Carter County

Smith et al	1-Jones	SW NW SE 26-1-3 W	
Schermerhorn et al.	1-Crockett	NE NW SW 23-1-3 W	OWD
Atlantic	1-Eason	NE SE SE 19-1-3 W	OWD

Cotton County

Moore et al	1-Chambers	SEc NW 2-2-10 W	

Creek County

Skelly	17-Fife	SEc SE SW 15-14-8 E	
Bengal	5-Tiger	SEc SW SW 17-17-7 E	
Magnolia	31-Vance	SWc SE NW 7-18-7 E	
Shaffer	1-Polk	NW NE SE 1-14-9 E	
Olean Pet	1-Farmer	NW SE SE 13-15-9 E	
Shaffer et al	1-Page	SE SW NW 34-16-10 E	
Margay	1-Page	SEc NE SE 34-16-10 E	
Mid-Cont. et al	1-Garrett	NWc SW 16-16-10 E	
Tibbens	5-Jackson	CEL NE SW 4-18-12 E	
Curtis et al	1-McHanon	SEc NE 9-18-9 E	

Grady County

Company	Well No. Farm	Location	
Carter	4-Polson	NW SE SW 27-3-5 W	OWD
Commerce Dev	1-Blunt	C NE NW 4-3-7 W	
Farley et al	1-McMahon	C NE NW 24-4-8 W	

Jefferson County

Bridwell et al	1-Jennings	SWc 20-7-5 W	
Gypsy	3-Busby	SWc SE SW 17-7-5 W	
Lesh-McCall	7-Peniston	NWc SW SW SE 17-7-5 W	
Lesh-McCall	7-Peniston	SEc NE SW SE 17-7-5 W	
McGinley et al	5-Clark	SWc NW SE SE 17-7-5 W	
Beck et al	2-Seay	NWc SW SE SW 34-6-6 W	

Logan County

Crosbie	1-Shaffer	NWc 20-19-4 W	

McIntosh County

Wolfe et al	1-Beck	NWc SE 15-12-18 E	

Muskogee County

Graham	1-Scott	SEc SW 11-14-18 E	

Noble County

White-Wilson et al.	1-Plumb	SW SE NW 10-24-1 W	

Okfuskee County

Atlantic	1-Berryhill	SEc NW 35-11-9 E	

New Field Operations in Oklahoma, Kansas, Panhandle, North, North Central and West Texas, Week Ended August 11, 1928 (*Continued*)

Okmulgee County

Company	Well No. Farm	Location	
Nicholson	2-Herrod	SW NW NW 14-11-13 E	
Hazlett	7-Tucker	NWc SE SE 2-13-14 E	
Smith et al	1-Berryhill	SWc SE NE SW 17-14-13 E	
Papoose	12-Brown	CEL NW SW 21-15-14 E	
Rebold	4-Strip	CSL SE SW 30-15-11 E	
Curtis et al	1-Messer	SWc NE 3-15-12 E	

Osage County

Mundy et al	1....	NEc SE 10-21-8 E	

Pawnee County

Mann et al	1-Sinnett	NE NW SE 22-20-9 E	OWD

Pittsburgh County

Quinton Speltor	1....	SEc 8-7-18 E	

Pontotoc County

Westhiemer-Daube	4-Wade	SE SW NE 19-5-8 E	
Louisiana	14-Perry	SW NE NE 19-5-8	

Pottawatomie County

Magnolia	1-Fyke	SW NE NW 29-7-5 E	
Magnolia	4-Risenhoover	SEc NE 14-7-4 E	
McCullough et al	4-Bruno	SEc NE 25-7-4 E	
McCullough et al	5-Bruno	SW SE NE 25-7-4 E	
Mid-Kansas	2-Gesselman	NW SW NW 25-7-4 E	
Sinclair	2-Neeley	SE NW SW 25-7-4 E	
Texas et al	1-Cherry	SW NW NW 25-7-4 E	

Seminole County

Sinclair et al	1-Pompey	NW SW SW 24-7-6 E	
Roxana	3-Hotulke	SE NE NW 23-7-6 E	
Carter	3-Cotche	NW SW NE 23-7-6 E	
Pure	8-Cotche	SE NE NE 23-7-6 E	
Barnsdall	2-Cotche	SW NW NE 23-7-6 E	
Pure	7-Cotche	SE NW NE 23-7-6 E	
Pure	6-Cotche	NW NE NE 23-7-6 E	
Slick	6-Williams	NW NE SE 15-7-6 E	
Gypsy	9-Hulhoke	SW SE SE 14-7-6 E	
Carter	6-Teewee	NWc NE 14-7-6 E	
Carter	5-Teewee	SE NW NE 14-7-6 E	
Roxana	2-Johnson	NE SW NW 13-7-6 E	
Carter	3-Harjo	SEc SW 11-7-6 E	
Harris et al	1-Harris	SEc NW 30-9-8 E	

Stephens County

Hines	1-Beaver	NWc SE SE 18-3-6 W	
Franklin	1-Bell	SE SW SW 13-1-4 W	
Franklin	6-Brittain	NWc SE 12-1-4 W	

Tulsa County

West Pet	16-Edwards	CEL SW SW 1-18-12 E	

Wagoner County

Creighton	2-Cinda	SEc NE NW 2-18-17 E	

KANSAS

Butler County

Garden et al	1-Sluss	SE NW NE 6-27-6 E	
Dixie	2-Stearns	NW SW SE 28-27-6 E	

Cowley County

Kentucky Nitro. & Oxy.	1-Hoyt	NE SE SW 7-33-7 E	
Kentukcy Nitro. & Oxy.	4-Townsite	NWc SW 18-33-7 E	

Chautauqua County

Graver et al	1-Stewart	SWc 29-32-10 E	
Borge	1-McKnown	SW NE SE 31-32-10 E	
Page	1-Barrington	CWL SW SW 34-32-10 E	OWD

Clay County

Roth-Faurot et al	1-Bradberg	SEc NW 21-9-4 E	

Elk County

Gilliland	1-Ferguson	SW NE NW 3-31-8 E	
Davis-Hazlett et al	1-Webb	NE NW SE 9-31-10 E	
Sherman et al	1-Armstrong	NW SW NW 10-31-10 E	
Sooner	3-Webb	NEc SW SW SW 10-31-10 E	
Denman Bros	1-Clough	C SW NE 25-31-10 E	
Blandell Drlg	3-Rettig	C NE NE 29-31-10 E	

Ellis County

Marland	1-Vine	SWc SE 27-11-19 W	

Greenwood County

Berge et al	1-Sanders	SE NE NE 5-28-11 E	
Henderson et al	1-Reece	NEc 29-26-9 E	

Marion County

General Utilities	1-Metcalf	SEc 10-16-7 E	

TEXAS

Archer County

Young et al	1-Young et al.	Blk-127	Harris
Sun	3-Ford	.....	Fitzgerald
Petroleum Prod	1-Wilson	Sec-84, Blk-1035	Geraldine
Johnson et al	9-Wilson	Blk-19	Geraldine

Brown County

Bainhill-Palmer	1-Woods	.....	Geiger
Outlier	1-Newton	Blk-282	Jones
Farlyn	1-Eads	Blk-636	Day
Milham	3-Rosser	.....	Cross
Brown Co. Gas	2-McDonald	Blk-18	Hunt
Evans	1-Martin	Sec-11	HT&B
Schmidt	1-Strange	Sec-6, Blk-65	Hunt
Dennis et al	1-Moren	Sec-30	HT&B et al.
Cranfill-Reynolds et al.	1-Kellar	Blk-141	Mitchell
Phillips	15-Hickman	Blk-783	Benson
Phillips	1-Dabney	.....	Brooks

Coleman County

Roth-Faurot	2-Terry	Blk-57	Coleman Co. Sch. Ld.
Reynolds et al	1-Gill	.....	Blanchard
Reynolds et al	2-Gill	.....	Armendaris
Cranfill-Reynolds	1-Henderson	Blk-494	Young
Amerada	1-Holt	Blk-630	Fisk

Callahan County

Dickey Bros	2-Williams	Sec-25	D&DA

Eastland County

Amerada	1-Manee	Sec-29, Blk-1	H&TC
Chestnut-Smith	1-Rankin	Sec-38, Blk-2	H&TC
Texas Pacific	19-Brewer	.....	Finley
Texas Pacific	1-Stewart	.....	Van Norman

Haskell County

Ziegler et al	1-Pierson	Sec-27	Taylor

Jack County

Chandler et al	3-Ellis et al.	Blk-4	Williams
Ellis et al	7-Ellis et al.	Blk-4	Williams

Jones County

Phillips	1-Boy	Sec-19, Blk-19	T&P
Mook-Texas	1-McCreight	Sec-280	Scalloms
Marland	4-Mason	Sec-18, Blk-19	T&P
McMann	1-Tyner	Sec-14, Blk-19	T&P
Roberts	3-Grayson	Sec-13, Blk-19	T&P
Roeser-Pendleton	1-Grayson	Sec-13, Blk-19	T&P

Limestone County

Atlantic et al	1-Thorton	.....	Boyd
Hicks-Deering	1-Stroud	.....	Varella

McCulloch County

McLean et al	1-Roberts	Blk-102	Mitchell
Dutton et al	1-Land	Blk-193	H&GN
McLean et al	1-Wells	Blk-1098	Hurpers

Shackleford County

Zoch et al	1-King	Sec-215	ET

Throckmorton County

Stock et al	1-Cummings	Sec-31	Comanche Indian Res.
Terley et al	1-Reynolds	Sec-83	Comanche Indian Res.

Wilbarger County

Fain-McGaha	2-Waggoner	Sec-17, Blk-4	H&TC
Bais-Dillard	3-Waggoner	Sec-7, Blk-4	H&TC
Fain-McGaha	1-Waggoner	Sec-23, Blk-4	H&TC
Laalaph	1-Waggoner	Sec-10, Blk-4	H&TC
Phillips	4-Waggoner	Sec-47, Blk-2	H&TC
Simms	3-Waggoner	Sec-5, Blk-5	H&TC
Fain-McGaha	1-Waggoner	Sec-32, Blk-4	H&TC
Consolidated	1-Waggoner	Sec-18, Blk-4	H&TC

Wichita County

Anderson	10-Geotze	.....	GC&SF
O'Neil	29-Rio Bravo	Sec-31, Blk-5	H&TC

Young County

Christie Bros	1-Hatfield	.....	Kutch
Sun	1-Tack	Sec-158	TE&L

WEST TEXAS AND PANHANDLE

Carson County

Roxana et al	1-Cooper	NWc SE Sec-5, Blk-9	I&GN

Crane County

Duffey	2-Cowden	NE SE NE Sec-19, Blk-X	CCSD&R

Fisher County

Brickertoss et al	1-McWhirter	CSL Sec-295, Blk-2	H&TC

Gray County

Wilcox	29-Worley et al.	NEc SW Sec-61, Blk-3	I&GN
Texas	3-Williams	NWc Sec-6, Blk-1	ACH&B
Magnolia	3-Fee	NE SE SE Sec-11, Blk-3	I&GN
Texas	6-Saunders	NE SW SE Sec-4, Blk-1	ACH&B
Roxana	1-Shaw	SWc Sec-5, Blk-1	ACH&B
Texas	5-Saunders	SEc Sec-12, Blk-A-6	H&GN

Howard County

Marland et al	5-Settles	SEc NE Sec-135, Blk-29	W&NW

Hutchinson County

Dixon Creek	3-Smith	SWc NE NE Sec-7, Blk-Y	M&C

Pecos County

California	18-Yates	Sec-34, Blk-194	GC&SF

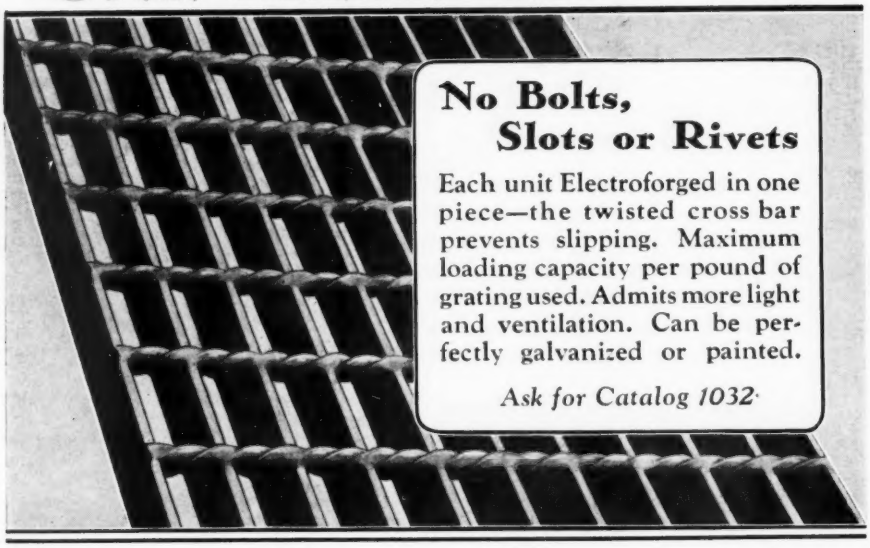
Reagan County

Empire	1-Sawyer	Sec-18	Gee

Winkler County

May Prod	1-Hendricks	CWL SE Sec-34, Blk-26	PSL
Southern Crude	T-67-1B5-Hendricks	SW SE SE Sec-44, Blk-26	PSL
Southern Crude	T-88-N2-Hendricks	SE SW SE Sec-28, Blk-26	PSL
Southern Crude	T-88-T3-Hendricks	CEL W½ SE Sec-34, Blk-26	PSL

ONE-PIECE GRATING



No Bolts, Slots or Rivets

Each unit Electroforged in one piece—the twisted cross bar prevents slipping. Maximum loading capacity per pound of grating used. Admits more light and ventilation. Can be perfectly galvanized or painted.

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STANDARD TANKS

ALL CAPACITIES—ALL PURPOSES

IT MAKES no difference what size tank you have in mind or what purpose it is to be used for, Standard Tanks will supply your requirement.

For over a score of years these tanks have been satisfactorily serving the oil producer and marketer. Station Tanks from 65 to 25,000 gallons; field storage tanks up to 55,000 barrels.

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THE STANDARD BOILER & PLATE IRON CO.

Niles—Ohio

small leases held by smaller operators.

A large part of the field is held by major companies, but there are sufficient small leases so well scattered that it probably would be impossible to stop the activity, or even slow it down.

There have been several informal conferences to discuss the chance of checking the drilling activity, but each conference has reached the decision that nothing can be done.

Due to the fact that comparatively few wells can be drilled deeper and that it will require between 100 and 120 days to complete a well to around 6000 feet, flush production at Santa Fe Springs can have little effect on total production in the state until December.

By that time Long Beach decline will be sufficiently large to partially offset the new production from Santa Fe Springs. It is likely that fully 200 new wells and perhaps as many as 300 will be drilled into the deep sand in this field within the next 12 months.

Only six new producers were reported at Long Beach this week. Flush production from the new wells totaled less than 5000 barrels, and as a result, the field will show another substantial decline. During the past ten days a number of producers have been killed to be cleaned out or to be worked over. This fact also worked against the daily average production holding up.

There are very nearly 200 wells drilling in the field, but many are falling behind schedule. It had been estimated that a new well could be completed in 4½ months, but this schedule has been wrecked by delays of all kinds. It is not generally thought that the Long Beach decline will be radical on account of the great number of wells drilling, but many feel that the peak has been passed.

At Rincon, the Ventura County field, near the Ventura Avenue field, along the ocean front, is making little progress. There are now 18 producers in the field, averaging close to 250 barrels to the well.

S. P. Land Co. No. 5 was completed for 1000 barrels of 25 gravity oil cutting 8 per cent at 3800 feet, while the same company's No. 1 started out making 475 barrels of 30 gravity oil at 3725 feet. Each well is making close to 1,000,000 cubic feet of gas. Wells in this field drilling for a deeper sand have proved disappointing, although all hope of a prolific deep sand has not been given up.

Two wells drilled up on the hills from the present production, proving the existence of oil bearing sands, found oil at from 6000 to 7000 feet, but neither could be placed on production on account of mechanical troubles.

There was considerable excitement at Elwood, on the ocean front some 12 miles west of Santa Barbara, last

week end when Rio Grande-Barnsdall's discovery well broke connections and ran wild for about 20 hours.

It was estimated that the well produced better than 200 barrels an hour until the crew brought it under control. Larger fittings were placed and the well put back on production early in the week. It is now making 2500 barrels of clean oil, the same as before it went on the wild rampage.

Rio Grande-Barnsdall have made a new location on the east end of the 1200-acre lease, which will be drilling next week. Other oil companies are securing acreage offsetting the Rio Grande-Barnsdall blocked tract, but there has been no scramble for leases and bonus prices are remaining within reason.

It is generally thought the discovery lease contains most of the best acreage, although there is a possibility that land outside of this blocked tract is good. There will be no rush of drilling.

There is some new activity at Ventura Avenue on account of the completion of the M.K.T. well, which proved up a part of the Petroleum Securities Orton lease. M.K.T. is starting three additional wells and Petroleum Securities (owned by E. L. Doheny) is drilling nine wells on the Orton and has three rigs up. A total of 44 strings of tools is running at new wells, while seven holes are being drilled deeper in the entire field, these including the M.K.T. and Petroleum Securities jobs already mentioned.

Efforts are being made in this field to conserve gas and 17 wells have been completely shut in, while a number of other producers have been pinched back 20 per cent. The conservation program calls for a readjustment in the pinching process every 30 days. After a new well is completed, it is permitted to flow for 30 days and is then pinched back 20 per cent. This program is being followed.

Safe Practice in Pulling Rods on Old Wells

TULSA, Aug. 13.—It is often necessary to pull rods and tubing on old wells for repair purposes. Accidents resulting in injury to workmen and irreparable damage to the wells often occur from faulty equipment. A few moments spent in inspection and repair before starting to pull a well may save a life and protect an investment.

The National Safety Council has published a pamphlet in which are set forth many excellent "does" and some excellent "dont's" for the gang pusher and his roustabouts.

As the derrick carries the biggest part of the load when a well is being pulled, it is natural that the derrick should be carefully inspected to see if it is capable of standing the strain

Billions of Bubbles

Correction

In our advertisement of August 1 in National Petroleum News under this cut, through an unfortunate transcription of text matter, inadvertently appeared this over-optimistic statement:

"Campbell 'Oil-Froth' Absorbers get *all* the gasoline out of the gas *all* the time."

Obviously, this is impossible, and we wish the Industry to know that we do not wittingly make any claims that we cannot back up.

Campbell "Oil-Froth" Absorbers do, however, extract the maximum of gasoline at a minimum of cost. Competitive tests have revealed this fact time and time again.

Campbell "Oil-Froth" Absorbers get most of the gasoline out of the gas.

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Natural Gas Engineer

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BETHLEHEM WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
Wax Distillate Chilling Machines — *Scale Wax Cooling Drums*
Wax Testing Presses — *Paraffine Wax Sweater Plants*
Complete Wax Plants designed and built
Pumps, Stills, Towers, Condensers and other Oil Refinery Equipment
Oil Burning Systems — *Complete Power Plant Equipment*

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Distillation—Fractionation

Sixty-eight articles in the last 52 issues of NATIONAL PETROLEUM NEWS have been published on the subject of increasing yield of products—improving their quality—reducing manufacturing costs—equipment design—

All these phases of profitable refining are discussed from many angles. Various types of equipment and various operating methods actually in profitable use are described.

This is an average of more than one article per issue on this single angle of refinery operation. For reference in your files we list them below:

1928

Distillation test in determining vapor pressure Aug. 1, p. 58

Light fractions from stabilizer July 25, p. 21

How important oil tests are applied Aug. 1, p. 80; July 25, p. 29; July 18, p. 26; July 11, p. 60

Improving efficiency of shell stills July 11, p. 69

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Zilwaukee refinery adapted to small field June 20, p. 23

Vertical steam still for fat oil distillation June 6, p. 37

Saves $80,000 yearly with auxiliaries June 6, p. 32

Fractionation theory and practice May 23, p. 102

Careful refining and selling build trade May 23, p. 56

Distillation process control by laboratory May 16, p. 57

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Good products at low cost Apr. 25, p. 85; Apr. 18, p. 61; Apr. 11, p. 54

Careful fractionation cuts costs Apr. 25, p. 48

Neutralizing lube oils with ammonia Apr. 11, p. 111

Bigger profits for refiners in 1928 Apr. 11, p. 28; Apr. 4, p. 25; Mar. 28, p. 28; Mar. 14, p. 42

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Automatic controllers for natural gasoline Sept. 21, p. 215

Gasoline recovery by charcoal method Sept. 21, p. 251

Pipe still shows 72% efficiency July 13, p. 63

National Petroleum News

Main Office: 1213 West Third St.

Cleveland, Ohio

to which it will be put. Loose guy lines should be tightened, and loose girts and sway braces renailed. The tubing board should be secured to the girts of the derrick with "U" or "J" bolts. The crown block should be secured to the crown to prevent its being overturned by a pull on the sand line and the sheave gudgeon boxes should have the caps bolted on to prevent gudgeons from jumping out and allowing a sheave to fall to the floor.

The bull wheel shaft bearings must be in good condition to prevent the wheels from climbing the derrick, while the engine must be firmly bolted to a solid foundation, and the engine fly wheels and pulleys should be keyed tight on the shafts to prevent their coming up the walk or through the belt house and joining the crew on the floor. Keys should be sheared off flush with the end of the shaft to prevent their catching in the clothing of the workmen.

Other points for the inspector to check are the bull wheel brake band and lever to make sure that the brake takes a secure grip on the bull wheels; the bull rope throw-off should be fast to the floor and set so as not to foul the bull wheel rim or dog; the tubing line, which suffers from salt air, should be inspected for worn places and the ends secured with wire-rope clamps.

Tripping and stumbling over tools left lying about the floor have caused more accidents than by defective machinery. The walkways and floor should be clear and all tools in their proper places. Only tools which are in serviceable condition should be used. A tool which will slip or break under a strain is a constant menace to safety. Elevator latches should be inspected to make certain that they work positively, and weak springs or worn pins should be replaced.

As is universally the case, the acts of workmen cause many accidents—both to themselves and to their fellow workers. Each man must do his work so as to protect himself and the others from accident. For example, in climbing the derrick make sure that the foot goes far enough through the rung of the ladder to prevent its slipping off; grip the side members of the ladder to avoid pulling off a rung.

The man at the power control must use the greatest care when a man is on the beam for any purpose to avoid throwing him off. The bull wheel ought to be turned by hand, as it is easy to turn loose of a handhold, while a foot may catch and allow the wheel to pitch the man out of the rig by way of the first or even second section.

Protruding belt clamps are a fruitful source of accident. They can deal a powerful blow or catch in a sleeve or pant leg and take a man for a trip around the wheel.

Humble Avoids Additional Labor Cost In Pressure Rejuvenation Work

By Paul Wagner
N. P. N. STAFF WRITER

Article 2

HOUSTON, Aug. 9

VARYING producing conditions in different oil fields necessitate different hook-ups in the installation of equipment for rejuvenation of gas pressures in the respective pay horizons.

In one important respect, however, Humble Oil & Refining Co. has been able to standardize its rejuvenation operations in the interest of efficiency and at little additional labor cost over what would normally obtain.

Both in the Powell and Stover fields of Texas, where producing conditions differ materially, the Humble builds identical type compression plants for rejuvenation work. These are also of a type used regularly by the Humble's natural gasoline department, with different size compressors operating at 350 pounds pressure discharge.

The production department is enabled by this plan to utilize the experienced operators employed in natural gasoline recovery to handle the compressors used for rejuvenation work.

Because of the compression plant arrangement virtually no additional installations such as cooling water equipment, fuel lines and so forth, are required.

From the time gas leaves the compressors on its way to the wells, however, a difference exists both in the equipment hook-ups and the methods employed for its induction into the oil pay.

Primarily the difference is that, at Powell, experience has shown that the fluid in the hole, accumulated either by shut down or because of the period elapsing between the time the well was removed from the pump and the gas induced, may be driven back into the sand. In the majority of key wells selected in the Stover field, however, it has been found necessary to flow sufficient fluid from the hole to actually expose the surface of the sand to the gas before induction can be started satisfactorily.

The four compressors installed in each Stover field compression station are split into two units, consisting of two engines operating independently of each other, but discharging into a common header. The two headers necessary to be used carry

RESULTS obtained in pressure rejuvenation work by the Humble Oil & Refining Co., in two dissimilar type fields of Texas were described in a first article appearing on page 25 of the August 1st issue of NATIONAL PETROLEUM NEWS.

The present article gives data on the different equipment installations required in the Powell field, in the central east Texas fault zone, where reservoir pressures are mainly hydrostatic, and in the Stover pool, Brown county, where greater quantities of gas are available from the lenticular sand pay horizons.

175 pounds and 275 pounds pressure, respectively.

WELLS requiring pressures from 175 pounds upwards are put on the 275-pound line, whereas wells taking less than 175 pounds are placed on the 175-pound lines.

There are several reasons for this hook-up, the three most important of which are:

(1)—The company is enabled to get a larger volume from the two machines operating at 175 pounds pressure than if the four engines were tied into a 275-pound line.

(2)—Considerable trouble is experienced from fluid accumulating in a high pressure line. It has been found necessary, in operating a 275 pound line, to install an accumulator tank about 1000 feet from the engines to remove moisture due to the high compression. The gas, after passing through the accumulator tanks, still retains sufficient moisture to necessitate installation of small drips ahead of each control meter. On the 175-pound line the small drips in front of the control meters are sufficient to remove the moisture.

(3)—An even more important reason is that several of the Stover field key wells take gas as low as 40 pounds pressure. The rapid expansion caused by reduction from 275 pounds to 40 pounds pressure causes freezing, even in moderate weather. This, however, is virtually eliminated by selective placing of such wells on low pressure lines.

In the Powell field the pressure of induction is more uniform. Two headers are used, however, in this field. One, which is called the kick-off header, is so arranged that one of the machines may be turned on any of the wells to kick fluid back into the sand in case of shut down. Pressure required to kick off a well is approximately 40 per cent higher than its operating pressure.

Under normal conditions all the machines are connected to the other, or operating, header.

Drips are installed in front of the headers and, where necessary, individual drips are placed ahead of the control meter.

Key wells in the Stover field are equipped in the same manner as gas lift wells, that is to say tubing is run into the hole and the end of the tubing placed below the bottom of the sand. A regular Armour-head is installed in place of the casing head. This permits flowing of the well either through the tubing or through the annular space between the casing and tubing.

Removal of fluid is necessary for exposing the sand wall to the induced gas; the gas being induced through the tubing or casing as desired, preferably through the casing.

Gas may be induced into this type of formation at lower starting and operating pressures if the surface of the sand is exposed to the induced quantities.

In the Powell field the fluid is easily kicked back into the formation. Therefore, everything connected with the pumping of a well except the casing may be removed.

A bull-plug, with a 2-inch welded collar, is screened on the casing, the gas passing directly from the control meter through the 2-inch connection to the well.

WHEN rejuvenation work was first attempted in the Powell field use was made of a two-stage, 100-horsepower compressor. Though a machine of such capacity was not necessary to properly carry on the work it had been previously idle in the Corsicana district warehouse and its installation was considered an economy.

The intake of the machine was connected to the residue line of the Humble's gasoline plant, which carried approximately 20 pounds of

residue pressure. A differential meter with pulsation chamber, consisting of four joints of 10-inch pipe, was installed on the intake to control the volume of gas compressed.

Pumping equipment was removed from the well, 2½-inch tubing run back in the hole and packed off at the casinghead. There were two reasons for this:

(1)—In the event it was found impossible to build up sufficient pressure to drive the fluid back into the sand then all the fluid could be flowed from the well and the gas started into the sand at a lower pressure; and,

(2)—If the fluid should build up and seal off the sand to such an extent that induction of gas was stopped the tubing would allow removal of the fluid from the well without loss of gas already induced into the sand.

THE discharge line from the compressor was connected directly into the casinghead, the gas being induced between the casing and the tubing.

When the operation was started the lease was in a semi-depleted condition and it was not considered advisable to make the expenditures necessary to rearrange tank batteries and connect them in such manner as would allow individual well tests of both oil and gas. No definite data being available on which to draw conclusions, and also due to excessive cost of operating the compressor electrically, the original installation was later shut down.

After about 10 days a decided slump in production was noted. This could not be stopped by usual methods, such as pulling rods, changing cups or otherwise shifting pumping equipment. The electric compressor was then started up again, bringing production back to within 10 per cent of the yield prior to the earlier shut down.

Then decision was reached to replace the electrical equipment with two direct driven gas engine compressors; also the quantity of gas induced was reduced for fear it might break through or channel to wells up-structure, thereby destroying the effect over any other part of the lease.

An abnormal decline in production becoming apparent two weeks after decreasing the gas volume, the quantity induced was raised again. The effect was noticeable, production increasing to the point where the abnormal decline started.

Apparently satisfactory results having been obtained from the first well and excess gas being obtainable from the two compressors, decision was reached to place two other wells on rejuvenation. It was then necessary to install two headers, such as hereinbefore described, connected in such manner that the compressor could be switched from one to the other.

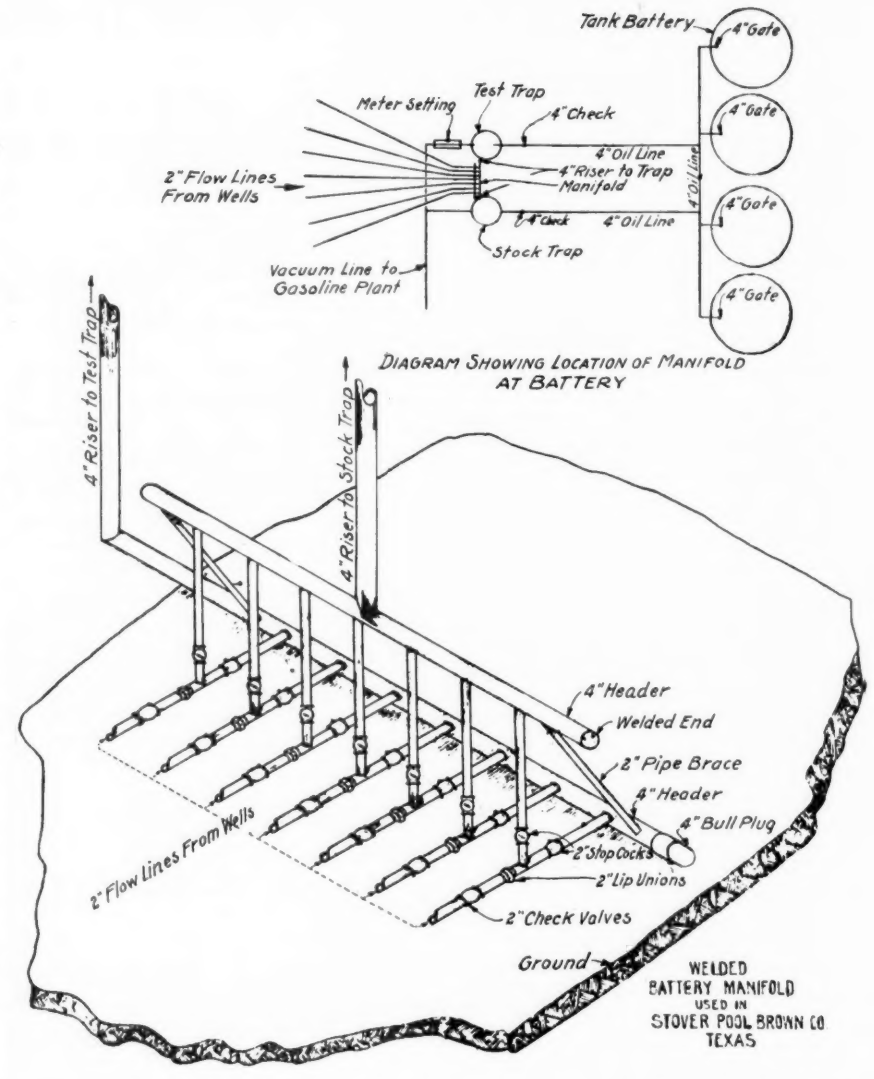


DIAGRAM SHOWING LOCATION OF MANIFOLD AT BATTERY

WELDED BATTERY MANIFOLD USED IN STOVER POOL BROWN CO. TEXAS

At first the compressor operator handled the flow of gas to the three wells by hand regulated valves with plain orifice meters in a centrally located meter house near the compressor room. Drips were installed to remove as far as possible the condensate collected in the lines after discharge of the gas from the compressors.

The system proved unsatisfactory for several reasons:

(1)—It was practically impossible to regulate the hand valves so as to maintain a steady gas flow to all three wells at the same time, as each well operated at a different pressure.

(2)—It was practically impossible to remove all condensate from the gas going through the meters, due to the short distance between the meters and compressors, the condensate entering the meters, causing considerable confusion and making accurate measurements impossible.

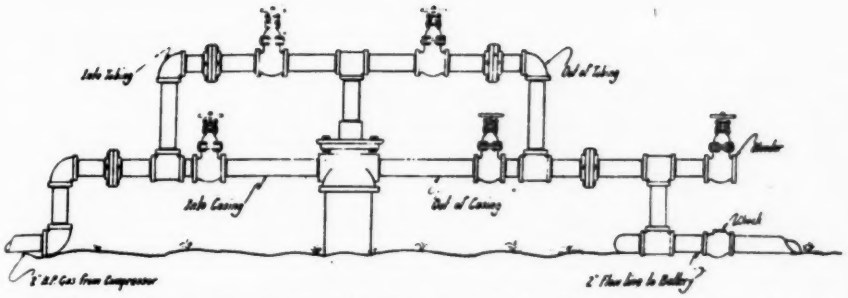
The idea of a centrally located control station was abandoned in favor of field control. With control meters at the individual well it was possible to install a drip at sufficient distance from the plant to allow removal of most of the condensate from the gas.

Small traps were installed in the line at the well, just before the gas entered the control meter, to remove all condensate not caught by the main trap. A well known type of control was placed at each well to assure accurate flow of the gas. This worked very satisfactorily.

WHEN decision was made to extend rejuvenation by adding six more Powell field wells a reduced rate of induction was applied with the realization it would reflect no noticeable increase in production but more than likely would slow down the decline. To successfully operate on the decreased volume of gas only one additional compressor was required.

Water encroachment had become so general over the field that this was a secondary consideration in selection of key wells. However, it was hoped the effect of gas induction on water encroachment would prove beneficial. Such has proved the case.

As Humble owns the main block in the Stover field of about 1500 acres, which produces from sand averaging about 12 feet in thickness, its original experiments there were approached with fresh interest.



Rejuvenation system, Powell field, Corsicana division, Humble Oil & Refining Co.

The first Stover field equipment installed was a high pressure compressor driven by a 100 horsepower motor. It was quickly replaced by three 80-horsepower direct driven gas compressors, each having capacity of approximately 350,000 cubic feet daily at intake pressure of 28 pounds.

Due to the fact some gas lift work was carried on in conjunction with rejuvenation an additional 80-horsepower direct driven compressor was added to the equipment, giving a total output of approximately 1,800,000 cubic feet at various pressures, varying directly with cylinder ratios on the machines.

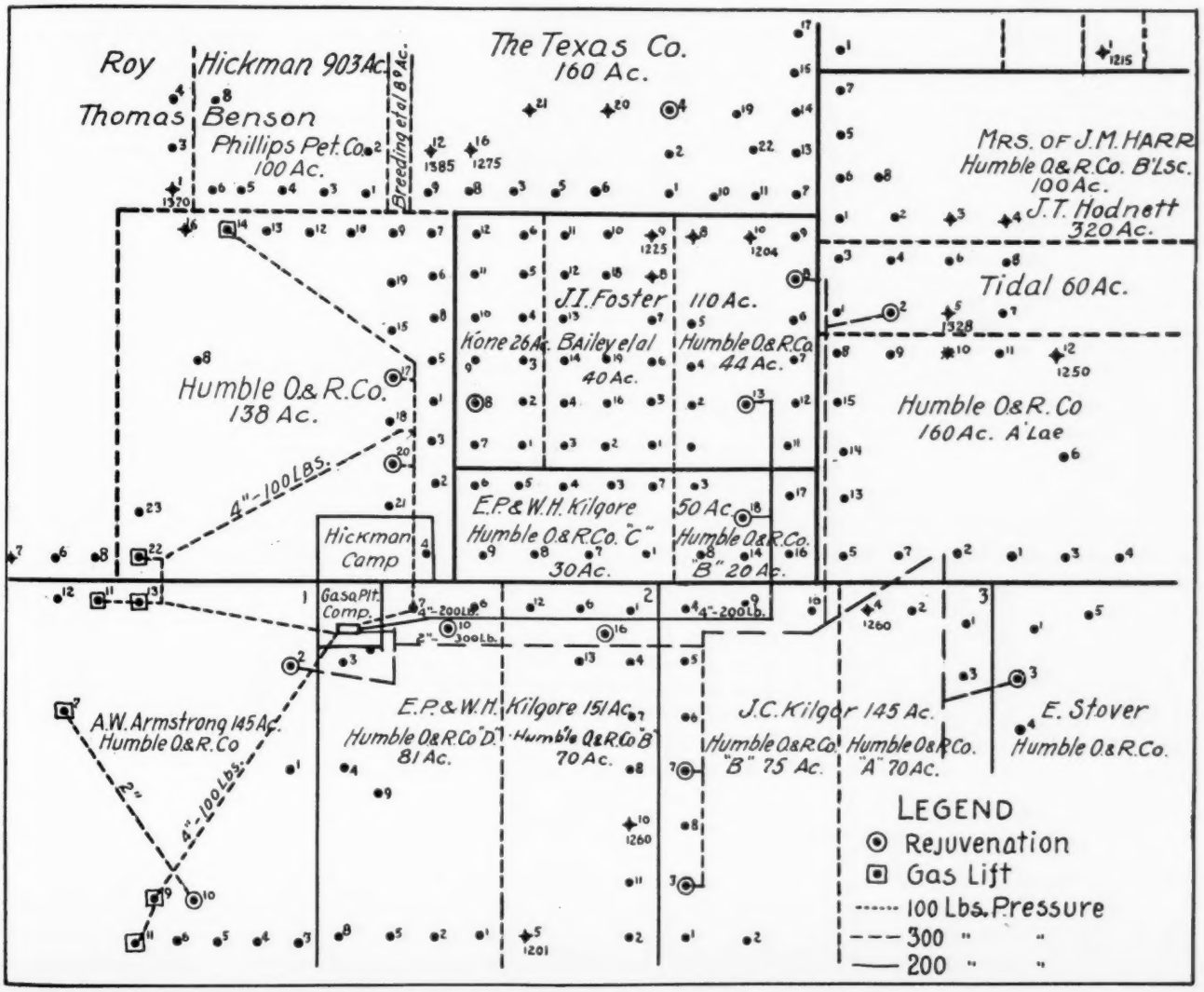
It was found advisable in Stover field to install a manifold with batteries of tanks and gas traps arranged to obtain individual well tests in order to check closely the results obtained.

Inasmuch as each manifold handled the production of seven wells with varying gas volumes it became necessary either to change the orifice plate for each well as it was placed on test for gas, or to make a manifold with sufficient plates to give accurate readings on the meter without removing the orifice plates. A manifold consisting of three plates was found sufficient to handle the gas volumes of seven wells.

Considerable work was necessary in attempting to remedy, or eliminate the gathering and freezing of condensate in the lines; also the freezing of control valves. These problems have been virtually solved, as follows:

The moisture in the lines is removed by an accumulator tank, installed about 1500 feet from the compressor plant on the high pressure line, which has been the most troublesome. Other lines are handled by pipe drips and risers installed at low points on the main line, with an additional trap for the control meters at the meter setting, where it was found the line traps were not sufficient.

Several methods were used to eliminate freezing of flow control valves. One method was the installation of the trap just ahead of the meter setting to remove the fluid. The greatest benefit is considered to have been derived from installation of three pressure lines, making possible the placing of key wells taking gas at a high pressure on the high pressure line, medium wells on the medium pressure line and low pressure wells on the low pressure lines.



Map Showing Where Humble Is Carrying Out Rejuvenation Work

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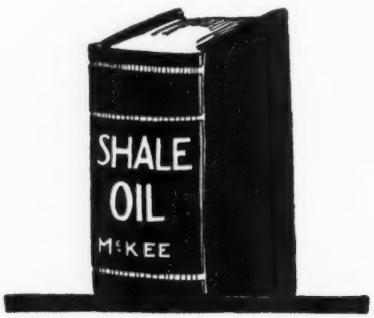

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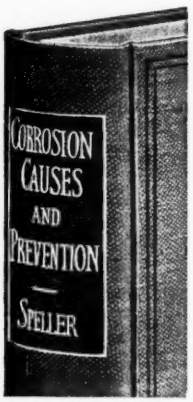

CORROSION—Causes and Prevention by Frank N. Speller is the result of 20 years' close study of the subject.

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Part II is devoted entirely to practical discussion of preventive measures. In the chapter on corrosion in the petroleum industry the author discusses refinery problems and methods of prevention of corrosion of pipe lines.

The depreciation due to corrosion in the petroleum industry is so great that its solution will probably mean the difference between profit and loss in the future. Mr. Speller in his book reduces the subject of corrosion to a science, and every petroleum engineer should have a copy.

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Why Worry About Sulfur in Gasoline In Summer—It's Harmless Then

By Gustav Egloff* and
C. D. Lowry Jr.**

Published in August issue of Industrial and Engineering Chemistry

THIS study presents an analysis of gasoline consumption in relation to temperature and shows a need for a rational attitude toward sulfur in gasoline. It reveals the fact that over 8 billion gallons of gasoline, more than two-thirds of the country's total consumption, are used in warm weather when, according to all published evidence, there is no danger of corrosion.

It seems absurd to refine this huge amount of gasoline to conform to an arbitrary sulfur specification which in most states, throughout the greater part of the year appears to be worthless and to serve only to necessitate wasteful refining practices[1].

We urge consideration of the only reasonable procedure — regulation of the sulfur tolerance in gasoline by the climatic conditions where it is to be used. At least in warm weather, we see no reason why the sulfur limitation may not well be revoked entirely, as no one has reported any evidence of corrosion under mild temperature conditions;

There is constant pressure on the oil industry to limit the sulfur content of gasoline to 0.1 per cent, lest automobile motors be injured by corrosion. Recent research, under the aegis of the General Motors Corp.[2] and the Standard Oil Co. of Indiana[3] has indicated, however, that corrosion takes place only when the atmosphere is at a temperature of approximately 32 degrees Fahr. or lower. Corrosion, it is stated, does not occur in warm weather. Why, therefore, refine gasoline to an extreme limit of sulfur the year round?

The sharp increase in the amount of high sulfur crude oils being refined has made it a more serious problem than ever to meet the 0.1 per cent sulfur in gasoline requirement. This will be seen from the estimate made by a prominent petroleum geologist that 62 per cent of the world's present production of crude oil contains 0.4 per cent sulfur or more. Miller[1] states:

> "The question of desulfurizing gasoline is confronting the refinery engineer today in a more acute form than ever before. The increased producing possibilities of the Permian Salt Basin area of west Texas, with a present daily production of 350,000 barrels, and an estimated potential production of 750,000 barrels, constitute a serious problem for the future."

Howe[2] writes:

> "Present refining methods for treating high sulfur crudes result in polymerization, the destruction of certain sulfur compounds, and unfortunately, the partial destruction of the unsaturated compounds which form such a large and essential part of cracked gasoline and which some regard as valuable in the anti-knock type of gasoline ... A gasoline producer estimates that if a higher percentage of sulfur could be tolerated in the gasoline of the country, refining losses could be reduced with a net annual gain of gasoline worth 50 million dollars."

Summary of Conclusions Regarding Corrosion

The work that has been done on corrosion of motors, particularly by Diggs and Mougey, has established the following generalizations:

1. Corrosion is exclusively a cold weather problem.

> "This trouble occurred only in cold weather—never in summer. The first tests, made in November, were performed during a period of relatively warm weather, on a blend ... running about 0.151 per cent sulfur. Exceedingly little corrosion occurred ... Marked corrosion occurred only when the temperature was in the neighborhood of 32 degrees Fahr. or lower.[1] "There were no complaints in summer regardless of the sulfur content of the fuel."[2] "There is no complaint during the summer, thanks to the beneficial effect of the higher temperature at which the engine runs, and what is more important, at which it starts."[3]

2. Corrosion occurs only when water collects in the crank case. There is

> almost unanimous agreement that water in the crank case is responsible (for corrosion). Although water alone will cause corrosion, the action may be accelerated by the formation of weak sulfurous or sulfuric acid. The chemical activity from this (sulfur) and other contaminants would be negligible if effective control of the formation of water were possible.[4]
>
> It is well known and easily demonstrated that sulfur dioxide and sulfur trioxide will not cause corrosion in the absence of moisture when the engine is operating at an optimum temperature. Carbon disulfide has been used experimentally in an automobile engine where there was no water vapor present, and no corrosion took place.[3]

A number of refiners have made tests with motor fuel containing as high as 0.6 per cent sulfur without any evidence of corrosive action in the motors.

3. Corrosion does not take place even in winter, in engines in constant use.

> On engines operated in continuous service in moderately heavy duty, or in long runs such as road tests, no water was found in the crank cases, and the wear on the cylinders and other rubbing surfaces was much below normal. These conditions will exist with fuels containing up to 0.25 per cent of sulfur, and usually on such cars it will be impossible to show any relation between the percentage of sulfur in the fuel and the wear on the rubbing parts.[1] When a car was given a 40,000 mile road test (in winter, with no special devices to prevent condensation of water) using a motor fuel containing about 0.25 per cent sulfur, no evidences of corrosion of the rubbing surfaces were found,

1. Cf. Egloff and Morrell, Oil and Gas J. Mar. 17, 1927, p. 150.
2. Mougey, Ind. Eng. Chem. *20*, 18 (1928).
3. Diggs, Ind. Eng. Chem. *20*, 16, (1928).

1. Oil Gas J. Mar. 1, 1928, 121.
2. Ind. Eng. Chem. *19*, 189, (1927).

1. Diggs, loc. cit.
2. Mougey, loc. cit.
3. Howe, loc. cit.

*Universal Oil Products Co., Chicago.
**Universal Oil Products Co., Chicago.

INDEX TO ARTICLES

Selected Bibliography on Petroleum Technology

Editor's Note—The brief abstracts of current literature printed below are so arranged that they may be cut apart and mounted on 3" x 5" library indexing cards. The indexing numbers assigned bring the cards into logical sequence in the files. The "Decimal Index of Petroleum Technology" gives the key to the articles. This book is published exclusively by NATIONAL PETROLEUM NEWS as a service to its readers. Price $1.00. Abstracts started April 4, 1928.

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"Careful Refining and Diligent Selling Build Profitable Quality Trade"

National Petroleum News, May 23, 1928, pp. 56-63.

Describes manner of selling specialty oils on quality basis by United Refining Co., Warren, Pa. Describes new filter house recently completed with many improvements including methods of charging filters by hand, it being held that mechanical handling exposes clay too much to air and allows it to collect moisture, this reducing yield of filtrate per ton of clay. Switch engine headlights also are used, one fixed above each filter, so that light illuminates the bottom of the filter without lowering a lamp into it. All switches are placed outside filter house. Chemists and not stillmen make all tests of products while stills are running and issue instructions to firemen and stillmen accordingly. This company makes a specialty of export business and has principal foreign oil testing instruments so tests can be made direct instead of by conversion from results obtained on American instruments. Plant has special laboratory where chemists of prospective customers may work with refinery chemists on their problems.

L. M. Johnston and J. L. Farrell 730.

"Installation of Auxiliaries Saves $80,000 a Year in Refinery Boiler Plant"

National Petroleum News, June 6, 1928, pp. 33-36.

Authors tell how this was done at Producers & Refiners Parco, Wyoming plant. Auxiliaries installed included steam meters which tell when valves need reseating or regrinding, turbine blades are out of adjustment or other conditions are such as to cause excessive steam consumption; water softening system; individual meters on each boiler; two exhaust steam systems, one operating under 15 pounds and one under 5 pounds; system for collecting the condensed steam for boiler feed water. This condensed steam, really distilled water, amounts to 60 per cent of the total feed water used.

At one time Parco power plant was developing 2,500,000 pounds per day of steam at a cost of $27,000 per month. Now, due to economies, only 2,000,000 pounds a day are generated, although more crude is being run, and the cost of this is only $11,000 a month. Operating efficiency of boiler house 83 per cent.

L. S. Cannon 740.

"Laboratory Staff Should Stand Guard Over Quality of Refinery Products"

National Petroleum News, June 13, 1928, pp. 73-79.

In the technical control of refinery operations it is necessary to have a laboratory, complete personnel of testers, chemists and engineers. Small scale units designed to operate as nearly like the refinery counterparts as possible are fitted up so that any desired operation met with in the refinery itself can be carried out but on a much smaller scale, says the author. He divides the necessary refinery laboratory into five divisions: control testing, experimental, analytical, research and development and motor fuel and lubricating oil testing laboratory. Investigation of crude oils proposed to be run in the refinery is within the province of the laboratory, he says. Such investigation should determine physical properties of the crude, yield of refined products possible, quality of the refined products and lubricating oil or cracking value of the crude. The article describes in considerable detail the operation of a typical refinery laboratory in its various phases.

J. C. Chatfield 725.

"Refinery Treating Costs and Losses Reduced by Circulating System"

National Petroleum News, June 20, 1928, pp. 29-30.

Empire Oil & Refining Co. reduced costs and losses in treating by installing a 3200-barrel batch agitator of latest design. Agitator is equipped with a pump recirculating system, a vapor tight roof with explosion doors, steam-foamite smothering lines and tail gas plant connections. Air blowing is eliminated by use of the circulating pump and the system is said to combine all the advantages of a continuous treating system without the difficulties of re-treating which sometimes vex operators of continuous treating plants.

Jensen, Joseph, and Robertson, Glenn D. 111.612

"Development in Southern California Since 1923."

Bulletin of American Association of Petroleum Geologists, Vol. 12, No. 6, June 1928, pp. 625-650.

Oil is being produced from Miocene beds, the authors point out, in Pacific Coast districts where the Pliocene formerly was thought to be the only source. Developments in the Los Angeles Basin are discussed, with special attention given the Dominguez, Rosecrans, Inglewood, Los Cerritos, Huntington Beach townsite, Seal Beach and Potrero districts. (Cross-index under 321.)

and the actual wear of the engine parts was very much less than for similar cars in normal private use.[1]

4. When condensation is not prevented, corrosion occurs even with fuels containing less than 0.1 per cent of sulfur. In a fleet of 200 taxicabs of the same make—

"in the winter of 1925-26, although the fuel averaged less than 0.10 per cent sulfur, and probably the maximum sulfur in any lot of the fuel was 0.12 per cent, very severe corrosion troubles were experienced on practically the entire lot of these cars. The crank case oils were badly contaminated with water and iron oxide."[1]

5. Corrosion may be prevented by equipping cars with devices for the regulation of jacket water temperature and ventilation of the crank case, these improvements eliminating the condensation of water. On the lot of taxicabs already mentioned—

"in the spring of 1928 .... thermostats and ventilators (were) installed. This change absolutely prevented corrosion troubles in the next winter .... This make of car in private service had been subject to corrosion troubles, but after the adoption of the ventilator and thermostat not a single complaint on corrosion was received from the entire year's production, regardless of the fact that many of these cars were operated on fuel with a sulfur content of approximately 0.25 per cent."[1]

With another group of cars with no preventives of condensation of water—

"with fuels with about 0.25 per cent of sulfur the complaints were very numerous and very bad, especially in the case of cars in intermittent service. In the 1925-6 series, with thermostats, ventilators and oil filters, water in the crank case was eliminated, and no corrosion complaints were received, regardless of the sulfur content of the fuel."[1]

Gasoline Consumption Data

Since these authorities show that corrosion occurs only under winter conditions (and then only in cars in intermittent service not equipped to prevent condensation of water in the crank case), the amount of sulfur which may be allowed in gasoline becomes primarily a question of climatic conditions. To give some idea of the magnitude of gasoline consumption in "non-corroding" weather, three tables are presented showing gasoline sales throughout the country in relation to the lowest temperatures usually encountered.

Table I shows the gasoline sales in 1927 by months, in the various states. The figures are from reports of the state taxing authorities.[2] Since in some states there is no gasoline taxation or inspection, exact figures on their use of gasoline are not obtainable. For these states, estimates have been made by methods indicated in the footnotes.

In connection with this and the succeeding tables, the map showing the gasoline consumption per car in the different states in 1927 is of considerable interest.

1. Mougey.

4. Mougey, quoting Thorne, J. Soc. Automotive Eng. *18*, 35 (1926)

1. Mougey, loc. cit.

2. Amer. Petroleum Inst. IX, No. 20. NATIONAL PETROLEUM NEWS, May 30, 1928, p. 29.

Table I—Sales of Gasoline, by Months, in 1927

(In Thousands of Gallons)

State	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Total
Alabama	9,276	9,437	10,915	11,453	12,462	12,298	13,599	14,170	13,665	14,091	13,358	12,501	147,225
Arizona	2,626	2,595	2,812	3,017	3,061	3,175	3,230	3,528	4,068	4,283	4,321	4,521	41,237
Arkansas	7,156	6,493	6,280	6,208	8,900	8,745	9,020	9,596	11,641	7,069	9,170	8,216	99,394
California	.....	218,816	.....	.....	270,333	.....	.....	273,754	.....	.....	254,778	.....	1,017,681
Colorado	8,157	7,482	7,813	14,814	8,590	11,338	13,912	13,906	13,004	10,844	10,352	8,972	129,184
Connecticut	8,121	7,717	10,063	12,863	14,474	15,299	17,139	16,972	15,891	15,091	13,917	12,406	159,953
Delaware	1,179	1,589	1,716	1,807	1,476	3,016	2,284	2,593	2,411	2,089	2,167	1,946	24 273
Dist. of Colum	3,879	3,619	4,422	4,841	5,313	5,495	5,260	5,090	5,073	5,223	4,839	4,750	57,804
Florida	25,119	22,597	23,844	21,807	20,741	20,778	17,416	18,767	19,568	17,285	19,382	20,944	247,248
Georgia	16,370	12,486	12,412	15,609	16,771	15,143	16,507	17,116	17,433	18,075	17,250	17,090	192,262
Idaho	1,430	1,944	2,231	3,084	3,671	4,194	4,927	5,379	4,691	4,559	3,565	2,668	43,343
Illinois(1)	50,100	43,700	43,800	55,400	60,600	68,192	71,000	61,343	69,984	66,325	59,564	55,184	705,192
Indiana	22,576	19,394	19,457	25,256	27,793	31,643	33,020	35,094	36,886	34,703	33,738	30,435	349,995
Iowa	16,847	15,249	18,381	42,049	25,381	25,363	35,075	28,751	29,405	27,515	25,432	19,650	309,098
Kansas	16,619	16,075	19,687	14,419	23,818	28,024	31,847	28,029	28,307	23,096	21,512	19,182	270,615
Kentucky	6,103	6,046	7,484	8,585	10,299	10,831	12,298	12,852	12,292	11,745	10,384	9,354	118,273
Louisiana	11,672	10,640	11,785	12,440	12,346	11,751	12,884	13,625	13,737	14,117	13,414	13,194	151,605
Maine	1,617	1,642	1,947	4,463	6,933	8,767	10,325	11,244	9,513	8,163	6,282	3,842	74,738
Maryland	7,831	7,406	11,274	9,408	11,111	12,072	13,009	13,480	13,033	12,008	10,916	9,952	131,500
Massachusetts(2)	15,630	14,850	19,300	24,700	27,800	29,350	32,950	32,600	30,500	32,950	26,700	23,850	307,180
Michigan	34,180	32,243	40,703	47,404	51,836	58,536	65,157	72,397	58,744	63,616	37,216	31,340	593,372
Minnesota	12,148	14,627	19,728	22,077	25,937	29,754	31,909	34,757	31,831	27,515	24,888	14,515	289,686
Mississippi	8,336	7,499	8,241	8,923	9,094	9,321	10,989	11,608	11,129	11,203	11,028	10,385	117,756
Missouri	19,783	18,764	23,091	31,058	28,153	28,054	29,703	31,025	32,122	27,982	27,767	24,717	322,219
Montana	.....	5,300	.....	.....	11,716	.....	.....	18,153	.....	.....	18,079	.....	53,248
Nebraska	10,869	10,386	11,302	11,741	14,867	14,709	17,831	18,519	16,908	15,457	14,478	12,610	169,677
Nevada	618	659	925	907	1,047	1,272	1,579	1,312	1,331	1,122	1,018	930	12,720
New Hampshire	1,449	1,319	1,757	3,587	3,788	4,818	5,797	6,345	5,257	4,586	3,766	3,253	45,722
New Jersey (3)	23,460	22,500	28,066	27,850	31,600	33,550	33,305	38,356	36,728	33,837	31,752	30,165	371,169
New Mexico	2,013	1,985	1,903	2,348	2,543	2,763	2,861	3,098	2,762	2,980	2,847	2,551	30,654
New York(4)	55,800	50,900	67,909	77,900	84,700	89,500	89,500	101,700	99,400	89,500	82,250	79,900	968,959
North Carolina	16,291	16,441	14,928	13,715	16,552	20,302	18,645	18,916	20,403	21,834	21,053	20,503	219,583
North Dakota	2,276	4,254	4,296	6,324	7,059	8,884	8,507	12,445	15,246	11,119	5,941	2,290	88,641
Ohio	41,631	43,041	54,046	64,460	75,841	69,232	77,973	76,926	75,620	71,274	62,721	58,036	770,801
Oklahoma	16,455	15,762	18,934	19,147	21,645	23,078	24,435	23,682	23,539	22,032	21,228	21,525	251,462
Oregon	6,664	6,973	8,974	10,469	11,337	12,375	14,505	14,946	13,029	11,944	10,291	9,478	130,885
Pennsylvania	.....	131,456	.....	.....	173,629	.....	.....	204,325	.....	.....	.....	182,147	691,557
Rhode Island	3,576	3,182	4,109	4,976	6,406	5,218	6,509	6,615	5,759	5,367	4,984	4,735	61,436
South Carolina	6,551	6,379	7,421	8,173	8,415	8,320	9,114	9,633	9,419	9,627	9,665	9,055	101,772
South Dakota	5,135	4,572	6,791	5,158	6,915	8,895	8,047	11,517	11,309	8,448	7,403	3,841	88,031
Tennessee	9,156	8,235	10,299	11,667	13,009	13,161	14,451	14,988	14,557	14,041	12,932	12,456	148,952
Texas	41,961	38,413	45,803	45,092	49,185	50,100	53,255	56,342	52,520	53,660	54,131	50,985	591,447
Utah	2,630	2,025	2,360	3,511	3,594	4,112	4,699	4,285	4,059	4,388	3,227	2,884	41,774
Vermont	888	877	1,225	2,252	3,622	3,310	4,228	4,727	4,071	3,643	2,378	1,946	33,167
Virginia	9,252	9,504	11,783	13,184	14,380	15,070	16,099	17,043	16,414	15,703	14,405	13,945	166,782
Washington	11,205	12,310	14,433	16,870	17,803	10,045	21,119	22,140	19,341	17,920	16,252	14,983	203,421
West Virginia	4,375	4,526	6,186	7,552	8,795	10,270	11,327	11,367	11,296	10,641	9,076	7,244	102,655
Wisconsin	12,887	13,820	18,046	24,351	29,200	32,615	36,037	37,614	33,090	30,790	26,000	19,136	313,586
Wyoming	1,394	1,282	1,433	1,611	2,113	2,771	3,387	3,217	2,749	2,437	2,070	1,754	26,218
Total Reported Consumption													11,585,152
Total Gasoline Produced in the U. S. for Domestic Use													12,512,976
Proportion covered in this Survey (5)													92.6%

1. Total consumption estimated by Nat. Petroleum News May 30, 1928, 29. Sales during each of the first seven months estimated from this total and Indiana statistics.
2. Total consumption estimated from motor vehicle registration and average gasoline consumption per car in the United States (500 gallons per year) monthly sales estimated from this total and from Pennsylvania, New Jersey and Connecticut statistics.
3. Total consumption estimated by Natl. Petroleum News May 30, 1928, 29. Sales during each of the first seven months estimated from this total and Connecticut and Pennsylvania statistics.
4. Total consumption estimated from motor vehicle registration and average gasoline consumption per car in the United States. Monthly sales estimated from this total and from Pennsylvania, New Jersey, and Connecticut statistics.
5. U. S. Bureau of Mines from Natl. Petroleum News May 30, 1928, p. 29. The gasoline unaccounted for includes that exempt from tax in the various States and that used in the service of the Federal Government.

Temperatures in Various States

In Table II are shown, by months, the mean minimum temperatures in all states. The data are taken from publications of the U. S. Weather Bureau covering observations made at their 208 regular stations over periods of from 5 to more than 50 years, the figures usually including at least 20 years.

The stations are so disposed as to give a representative picture of the climate of each state.

To obtain the data in Table II, at each station, the lowest temperature for each day was recorded. The observations made during a month by each station were averaged, giving the monthly mean minimum temperature.

An average of these for the number of years the station had been in operation was then made, and the means for all the stations in each state were again averaged to give the state's monthly mean minimum temperatures, which are the figures used in the table. As they show the lowest temperatures normally found, these mean minimum temperatures are the best available index to weather conditions as they affect the sulfur problem.

A mean minimum temperature of 40 degrees Fahr. has been selected as a suitable dividing line between weather requiring low sulfur gasoline and that in which a sulfur specification should be unnecessary. In view of the statement of Diggs, that "marked corrosion occured only when the temperature was in the neighborhood of 32 degrees Fahr. or lower," the choice of 40 degrees Fahr. gives an ample margin of safety for irregularities in temperature.

In the table, figures of 40 degrees Fahr. and above, are therefore, underlined to denote the periods in which the published data indicate that corrosion will not occur. The mean temperature in any state is of course, much higher than the mean of the minima here given.

Sales of Gasoline in Warm and Cold Weather

To show the relative proportions of warm and cold weather gasoline, the sales of gasoline in 1927 in months whose mean minimum temperatures are 40 degrees Fahr. or above, and the sales in months below this temperature, are given in Table III.

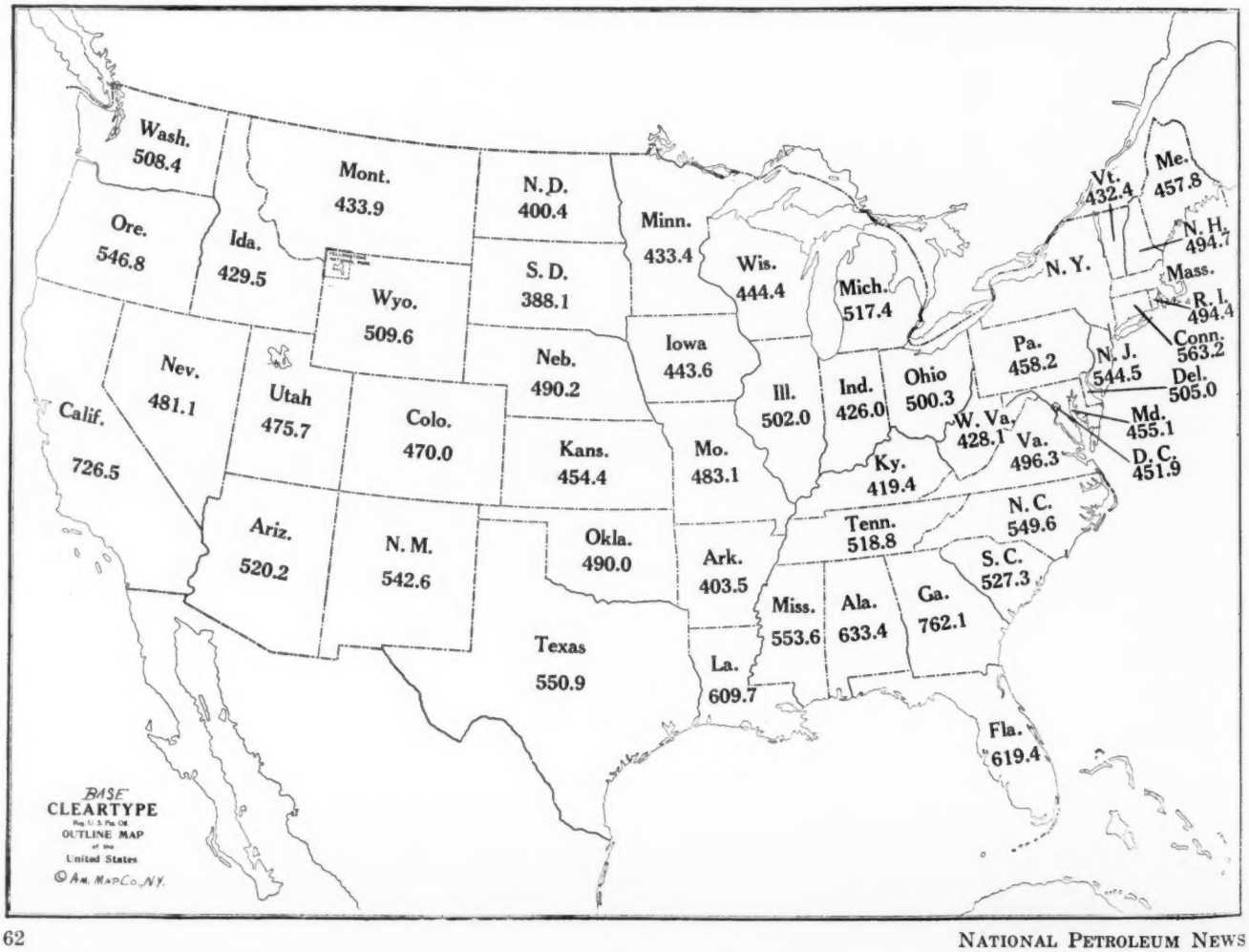
It will be noted that approximately 71 per cent of the gasoline consumption reported was in weather warm enough to prevent corrosion. A number of states should experience no corrosion on high sulfur gasoline at any time of the year, notably California and Texas, both of which consume large quantities of gasoline and produce high sulfur crude oil in large volume. To be sure, there are mountainous areas to which the climatic generalizations will not apply. But in view of the published data on corrosion the table would indicate that for a large part of the gasoline marketed a sulfur specification is superfluous.

At first thought it may not seem feasible to fit gasoline to the weather. But the differentiation of summer and winter gasoline is now established practice. In volatility, the Bureau of Mines' semi-annual surveys show definite seasonable variation. There should be no insurmountable difficulty in distributing gasoline without regard to sulfur content in the summer months, and reducing the sulfur in addition to raising the volatility when cold weather conditions prevail.

Conclusions

This proposed elasticity in the sulfur specification may meet objection on the ground that allowing the marketing of high sulfur gasoline for even part of the year, could lead to abuse of this privilege. But there is even now no bar to the selling of any sort of gasoline except the integrity of reputable oil companies, who may be relied upon not to play false to the interests of the motoring public. The improvement in gasoline in recent years, particularly the introduction of fuel of high volatility during the winter months, has not been pri-

Average gasoline consumption per motor vehicle by states in 1927, as indicated by tax returns. Figures are gallons



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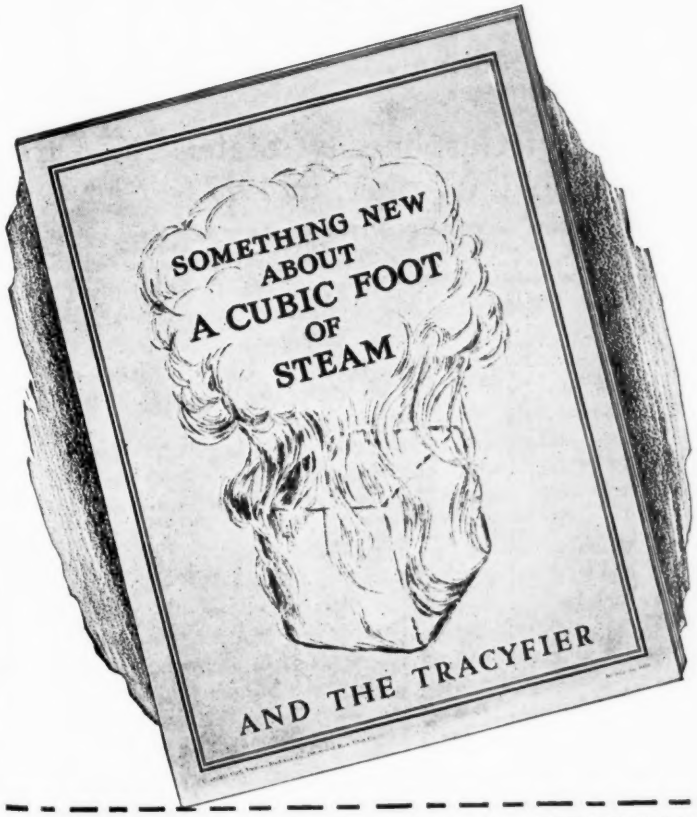

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marily in response to a demand from the public, but as an advance due to competitive conditions and a real desire to market the best product possible. The same forces would control the putting into practice of changes in the sulfur specification. It would be a great improvement over the existing conditions if the present unnecessarily rigid standard were replaced by regulation of the sulfur tolerance in gasoline in accord with the known facts regarding corrosion.

We are not urging that no attention be paid to the sulfur content of motor fuel. But the elimination of the sulfur requirement in warm weather is in accord with published work on corrosion, and would be a means of effecting economies in refining and of supplying better antiknock motor fuel. The annual saving to the country which this measure would accomplish, is estimated at 35 million dollars.

(The writers wish to express their appreciation of the assistance given by B. Parry, of the New York office of the U. S. Weather Bureau in obtaining the temperature data used in this paper.)

Virginia's Tax for 5 Years Collects $26,288,075

RICHMOND, Va., Aug. 4.—Virginia gasoline tax collections for the five-year period ended June 30, 1928, total $26,288,075.10, according to figures compiled by Motor Vehicle Director James M. Hayes, Jr.

Had the present rate of tax (5 cents a gallon) been in effect for the full five-year period, more than $40,000,000 would have been realized.

Collections for June were $828,606.98, or $149,382.64 in excess of the same month in 1927, when $679,244.34 was collected. Allowing for the one-half cent advance in the tax, the increase for the month was more than 10 per cent.

Figures compiled by Mr. Hayes show that 82,127,936 gallons of gasoline were sold in Virginia in the first six months of this year, the tax collected amounting to $3,970,581.45. In 1927 the total amount of gasoline sold was 166,782,895 gallons.

As the months of July and August are the heaviest months of the year and September and October are above the average, Mr. Hayes expects the 1928 total to be in excess of 185,000,000 gallons.

In 1924, the first full year of the gasoline tax, the state collected $3,313,188.47 on 110,358,719 gallons. The 185,000,000 gallons anticipated for 1928 will yield approximately $9,000,000.

Oliver United Filters, Inc., has removed its general offices from 503 Market St., San Francisco, to Federal Reserve Bank Bldg., San Francisco, as of Aug. 4.

Table II—Mean Minimum Temperatures by Months

(Degrees Fahrenheit)

STATE	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Alabama	39	**40**	**48**	**56**	**62**	**69**	**71**	**71**	**66**	**55**	**45**	39
Arizona	33	36	**40**	**45**	**51**	**60**	**69**	**67**	**60**	**48**	39	32
Arkansas	30	32	**41**	**50**	**59**	**67**	**70**	**69**	**62**	**50**	**40**	32
California	**40**	**42**	**45**	**47**	**51**	**55**	**59**	**59**	**56**	**51**	**45**	**41**
Colorado	14	10	23	32	**41**	**50**	**56**	**55**	**46**	35	24	16
Connecticut	20	22	28	38	**49**	**57**	**64**	**62**	**55**	**45**	34	25
Delaware	25	24	33	**43**	**53**	**61**	**68**	**66**	**59**	**48**	38	28
Dist. of Col.	26	27	34	**43**	**54**	**63**	**68**	**66**	**59**	**47**	37	28
Florida	**53**	**55**	**59**	**64**	**69**	**73**	**75**	**75**	**73**	**67**	**59**	**54**
Georgia	39	**40**	**47**	**54**	**62**	**68**	**71**	**71**	**67**	**56**	**46**	**40**
Idaho	22	26	33	38	**48**	**51**	**58**	**56**	**48**	39	31	23
Illinois	21	22	33	**43**	**54**	**63**	**69**	**66**	**58**	**47**	35	25
Indiana	22	22	33	**43**	**54**	**62**	**66**	**65**	**58**	**47**	38	25
Iowa	11	13	27	**40**	**51**	**60**	**65**	**52**	**55**	**43**	30	18
Kansas	15	**22**	32	**43**	**53**	**61**	**67**	**66**	**58**	**45**	33	23
Kentucky	26	27	36	**46**	**56**	**65**	**68**	**61**	**60**	**48**	37	29
Louisiana	**43**	**46**	**52**	**59**	**66**	**72**	**74**	**74**	**70**	**60**	**50**	**44**
Maine	10	10	20	32	**42**	**50**	**59**	**55**	**49**	**40**	29	17
Maryland	27	28	35	**45**	**55**	**64**	**69**	**67**	**61**	**49**	39	30
Mass.	23	22	29	38	**48**	**56**	**63**	**62**	**56**	**47**	37	28
Michigan	13	12	21	34	**44**	**53**	**59**	**57**	**51**	**41**	28	19
Minnesota	1	4	19	34	**44**	**54**	**60**	**58**	**50**	38	23	9
Mississippi	37	38	**46**	**53**	**60**	**68**	**70**	**70**	**64**	**53**	**43**	37
Missouri	21	23	34	**45**	**55**	**64**	**68**	**66**	**59**	**47**	35	25
Montana	9	11	22	33	**41**	**48**	**55**	**51**	**48**	**33**	22	15
Nebraska	12	14	25	38	**49**	**59**	**64**	**62**	**42**	38	26	17
Nevada	21	24	29	34	**41**	**49**	**56**	**54**	**46**	36	28	22
New Hamp.	12	11	23	33	**44**	**52**	**59**	**55**	**48**	39	28	17
New Jersey	26	25	33	**42**	**52**	**61**	**67**	**66**	**60**	**50**	39	29
New Mexico	22	25	32	39	**47**	**56**	**61**	**59**	**52**	**41**	30	22
New York	16	15	24	36	**47**	**56**	**62**	**60**	**53**	**43**	32	22
N. Carolina	35	35	**41**	**49**	**58**	**66**	**70**	**69**	**62**	**53**	**43**	36
N. Dakota	6	4	12	26	**41**	**51**	**56**	**53**	**43**	32	17	2
Ohio	21	22	30	**41**	**52**	**61**	**65**	**64**	**57**	**46**	35	26
Oklahoma	28	28	**40**	**49**	**58**	**66**	**69**	**69**	**63**	**50**	**40**	30
Oregon	31	33	36	39	**44**	**48**	**52**	**51**	**47**	**42**	37	33
Pennsylvaia	22	22	30	**40**	**51**	**60**	**65**	**63**	**57**	**46**	36	26
Rhode Island	23	21	29	38	**47**	**61**	**63**	**62**	**57**	**48**	38	33
S. Carolina	37	37	**45**	**52**	**61**	**68**	**71**	**70**	**69**	**55**	**44**	37
S. Dakota	6	8	21	35	**46**	**56**	**61**	**59**	**50**	37	23	13
Tennessee	32	24	**42**	**50**	**59**	**66**	**70**	**69**	**62**	**51**	**41**	34
Texas	**40**	**42**	**50**	**56**	**64**	**71**	**73**	**73**	**67**	**59**	**49**	**41**
Utah	19	23	29	36	**42**	**51**	**59**	**58**	**48**	37	30	20
Vermont	8	8	19	32	**44**	**52**	**59**	**55**	**42**	38	27	14
Virginia	30	30	38	**45**	**55**	**63**	**67**	**67**	**61**	**50**	39	32
Washington	31	33	36	**40**	**45**	**50**	**55**	**53**	**49**	**43**	37	33
W. Virginia	33	32	**43**	**51**	**62**	**70**	**73**	**72**	**66**	**56**	**43**	34
Wisconsin	9	11	23	36	**47**	**57**	**62**	**60**	**53**	**42**	26	16
Wyoming	9	11	19	29	37	**45**	**50**	**48**	**40**	30	20	11

Temperatures of 40 degrees F. or over are bold face type.

Table III—Sales of Gasoline, by States, in Warm and Cold Weather, in 1927

STATE	No. Months with Mean Min. Temp. 40° F. or above	Sales in Warm Months (thousands of gals.)	Per Cent of Total Sales	No. Months Below 40°F.	Sales in Cold Months (thousands of gals.)	Per Cent of Total Sales
Alabama	10	129,512	87.3	2	18,713	12.7
Arizona	8	27,174	65.9	4	14,063	34.1
Arkansas	9	77,529	78.0	3	21,865	22.0
California	12	1,017,681	100.0	0	0	0.0
Colorado	5	60,750	46.9	7	68,434	53.1
Connecticut	6	92,866	58.1	6	67,087	41.9
Delaware	7	15,676	64.6	5	8,597	35.4
Dist. of Col.	7	36,295	63.5	5	21,509	36.5
Florida	12	247,248	100.0	0	0	0.0
Georgia	11	175,892	85.2	1	16,370	14.8
Idaho	5	22,862	52.7	7	20,481	57.3
Illinois	7	452,842	64.2	5	252,350	35.8
Indiana	7	224,395	64.1	5	125,600	35.9
Iowa	7	213,539	68.0	5	95,559	31.0
Kansas	7	177,540	66.3	5	93,075	33.7
Kentucky	7	78,902	66.6	5	39,371	33.3
Louisiana	12	151,605	100.0	0	0	0.0
Maine	6	53,945	72.1	6	20,793	27.9
Maryland	7	84,121	63.0	5	47,379	36.0
Mass.	6	183,050	59.5	6	124,130	40.5
Michigan	6	370,286	62.4	6	223,086	37.6
Minnesota	5	154,188	53.2	7	135,498	46.8
Mississippi	9	91,536	76.8	3	26,220	23.2
Missouri	7	208,097	64.6	5	114,122	35.4
Montana	5	27,206	51.1	7	26,042	48.9
Nebraska	5	82,834	48.8	7	86,843	51.2
Nevada	5	6,541	51.4	7	6,179	48.6
New Hampshire	5	25,995	56.8	7	19,727	43.2
New Jersey	7	235,226	63.5	5	135,943	36.5
New Mexico	6	17,007	55.5	6	13,647	44.5
New York	6	554,430	57.2	6	414,659	42.8
North Carolina	9	166,348	75.8	3	53,235	24.2
North Dakota	5	52,141	58.8	7	36,500	41.2
Ohio	7	511,326	66.5	5	259,475	33.5
Oklahoma	9	197,720	72.8	3	53,742	27.2
Oregon	6	78,136	59.4	6	52,749	40.6
Pennsylvania	7	442,204	63.9	5	249,353	36.1
Rhode Island	6	35,874	58.1	6	25,562	41.9
South Carolina	9	79,787	79.4	3	21,985	20.6
South Dakota	5	46,683	53.0	7	41,348	47.0
Tennessee	9	118,745	75.2	3	29,847	24.8
Texas	12	591,447	100.0	0	0	0.0
Utah	5	20,749	49.6	7	21,025	50.4
Vermont	5	19,958	60.5	7	13,209	39.5
Virginia	7	101,893	64.7	5	58,889	35.3
Washington	7	134,238	66.0	5	69,183	34.0
West Virginia	9	86,510	81.1	3	16,145	18.9
Wisconsin	6	199,346	63.5	6	114,240	36.5
Wyoming	4	12,124	46.2	8	14,094	53.8
Totals		8,197,229	70.8		3,387,923	29.2

Visiting Around the Refineries

By Paul Truesdell

National Petroleum News

STANDARD OF CALIFORNIA is going after business of selling airplane fuels, it would appear from the fact that S. S. Chadderton, formerly assistant manager of the refined oil and naphtha division has been appointed manager of the newly established aviation division of the company. J. B. Thompson, formerly assistant district sales manager in San Francisco, has been appointed to succeed Mr. Chadderton as assistant manager of the refined oil and naphtha division.

The June issue of the Standard Oil Bulletin was largely taken up with a description of the company's new plane, a trip made in it by four executives of the company from San Francisco to the new Standard of California refinery at El Paso, Tex., which took 12 hours instead of 40 hours as by train.

It is at least a good guess that Stellarene, produced by the Leamon vapor phase cracking process which has just been taken on by the California company, may play a big part in the company's airplane fuel program.

* * *

THE stiffening in the tank car price of gasoline makes a barrel of high gravity crude oil more valuable to the refiner than it was before, says Mr. Farish, president of the Humble Oil & Refining Co. At the same time, he goes on to explain, the slackness of the fuel oil market and the excess fuel oil that is being produced as a necessary accompaniment of the increased crude runs being made in order to realize the needed gasoline, makes the barrel of heavy crude of less value. Thereupon, he proceeds to increase the posted price of the lighter grades of crude and reduce the posted price of the heavier crudes on a graduated scale.

When gasoline is in demand and fuel oil is not wanted, why is it not to the advantage of the refiner who has cracking stills to buy cheap crude or cheap fuel oil and crack them? This produces high yields of gasoline and low yields of fuel oil and a considerable amount of stove distillate or kerosene that the market usually can absorb readily.

The way the refiners have learned to handle cracking stills, they can operate on almost anything they have to crack. Of course the royalty on cracking runs around half to three-quarters of a cent a gallon on the gasoline produced but even at that it would seem that gasoline made by cracking crude worth 88 cents a barrel could be sold at a profit cheaper than that made, generally in smaller yield too, from crude costing say $1.66.

* * *

IT LOOKS as if the British Isles may see a battle for supremacy between vapor phase cracked anti-knock fuel and Ethyl gasoline. It is known that the Anglo-Persian Oil Co. is diligently investigating all the vapor phase cracking processes that are offered in this country and probably in other countries as well. The Anglo-American Oil Co., Standard company in England, is marketing Ethyl gas and I believe that company is the only company selling it over there.

J. H. Coxon, one of the technologists of the Anglo-Persian, spent some time in this country, "visiting around the refineries" recently. It is understood he investigated the Gyro, the Leamon and the Knox vapor phase cracking systems. He said nothing to anybody, so far as I know as to what he thought of any of the processes or what his report to his company would be.

* * *

THE CRAIG OIL CO. is the latest of several companies with refineries in Toledo, O., to announce extensions to its plant. The company, according to Pressly T. Craig, president, has signed a contract with the Foster-Wheeler Corp. for a 2000-barrel a day complete distilling unit that will practically double the capacity of its plant.

The company also plans making additions to its wax plant, reconstructing its cracking equipment and improving its water front facilities. The plant is running on north Lima crude but it is likely this supply will be supplemented either with Illinois crude or Mid-Continent crude, Mr. Craig says. It is likely to be easier for Independent companies to buy crude from the Prairie Oil & Gas Co. from now on, particularly when they are located where delivery of the crude will mean a long haul for the Prairie Pipe Line Co.

Toledo is getting more and more to be an important refining center. Other companies that have done extensive work in enlarging and improving plants in Toledo are: the Sun Oil Co., Standard Oil Co. of Ohio, Paragon Refining Co. and Hickok Oil Corp.

* * *

ARTHUR G. McKEE & CO., Cleveland, refinery engineers and construction contractors have well under way work on two refineries in Rumania for the Phoenix-Petroleum Co., of London. The London company is the holding company for a Rumanian organization. Both the plants are located at Ploesti, Rumania. One, known as the Uneria plant, consists primarily of a 4500-barrel a day pipe still distillation unit and the other, the Orion plant, consists of a similar distilling and fractionating unit having a capacity of 7000 barrels a day. Gasoline yield is the least of the worries of Rumanian refiners. The fractionating equipment at these two plants is designed to furnish a varnish makers' naphtha of 300 initial boiling point and 380 end point, kerosene, gas oil and fuel oil. The full name of the Rumanian company operating the refineries, in case anybody cares, is Uneria Societate Anonima Romana de Petrol.

Crude for the plants comes from the Tintea, Bustenari and Gura Ocnitza fields.

H. E. Widdell, vice president of Arthur G. McKee & Co., in charge of the refinery branch of the business, made a trip to Rumania in the interest of this job last winter.

* * *

A BIBLIOGRAPHY of the cracking art for 1927, by Gustav Egloff and C. D. Lowry, Jr., of the Universal Oil Products Co. is to appear in the August number of the Journal of the Institution of Petroleum Technologists, according to Dr. Egloff. I had the opportunity to look over this work. It would seem to be of great value to anyone who wishes to keep abreast of the developments in the liquid and vapor phase cracking fields and patents that are issued in connection with these developments.

The present trend of prices, more than ever before, confirms what we have said throughout the years:

"Crack cheap fuel oil with the Dubbs Process and convert it into 50% super-quality premium gasoline in one operation"

And now, in the same operation, *make super-quality premium fuel oil as a by-product* of cracking cheap fuel oil

Growing Volume of Oklahoma Gasoline Moving on the Spot Market

By J. C. Chatfield
N. P. N. STAFF WRITER

TULSA, Aug. 13

NEARLY one tank car of gasoline out of every four manufactured in Oklahoma is being sold direct to the jobbing trade on a strictly spot basis, according to calculations made from figures of the U. S. Bureau of Mines and spot market statistics collected by Platt's Oilgram.

In December, 1927, one car of gasoline was being sold to jobbers direct on the open spot market out of every 6.8 cars of gasoline refined in the state.

The growth of the spot market in the Mid-Continent field this year has been almost phenomenal. Most marked advances were made in the first quarter of the year. Since that time the spot market has been more stable at approximately one-fourth of all gasoline shipped from refineries.

To illustrate the growth of spot market trading between jobbers and refiners the writer has prepared Fig. 1, showing the percentage relationship of spot gasoline sales to jobbers to all gasoline shipments from Oklahoma refineries. The spot sales of gasoline have been taken from the records of Platt's Oilgram which receives daily signed statements from refiners operating 83 per cent of the active still capacity of the state engaged in selling gasoline on the open market.

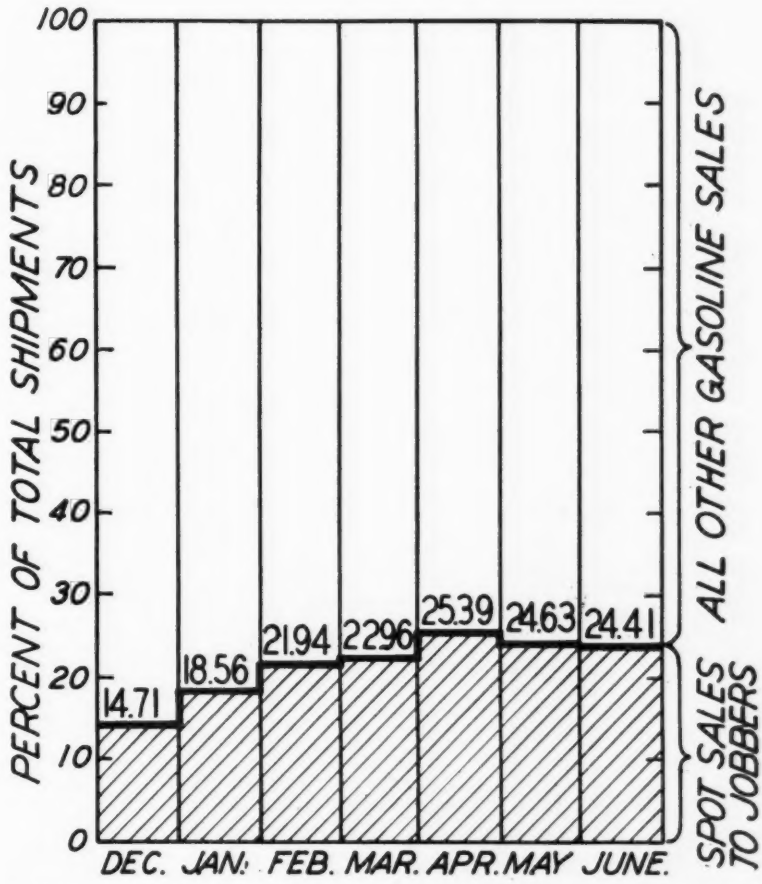

Fig. 1—Percentage relationship of Oklahoma refinery gasoline sold on the spot market direct to jobbers to total shipments of gasoline from Oklahoma plants. Data from U. S. Bureau of Mines Reports and Platt's Oilgram

These statements are verified by the Oilgram from time to time through inspection of original records by an Oilgram staff man. Total shipments of refinery gasoline were computed from monthly reports of the U. S. Bureau of Mines to June 30, the date of the latest government report.

The chart indicates that April was the peak month of spot market sales direct to jobbers when the percentage rose to 25.39 per cent of all shipments. April sales rose to this level due largely to the advancing refinery market which caused jobbers to purchase ahead for speculation. Their judgment has been thoroughly vindicated by the subsequent steady advances in market quotations.

Since April the price of gasoline in Oklahoma has risen to a point where jobbers' margins have grown very narrow. As a result buyers have been taking advantage of guaranteed margins in the contracts to the full extent of the schedules. This tendency has had the effect of flattening out the curve of spot sales.

In studying this curve it should be remembered that exporters have played a big part in the Mid-Continent gasoline market this year, buying larger and larger quantities as the season has advanced. Spot sales to jobbers as shown in Fig. 1 do not include sales to exporters. If they were to be included in the spot market classification it would be found that the curve would have risen even more abruptly, indicating a lessening quantity of gasoline sold on contract to Independent distributors.

It is apparent from a study of the chart that refiners are changing their gasoline sales policies. Marginal guarantee contracts which were in effect before the present rising market got under way have been kept on the books as a matter of course. But refiners have not been actively soliciting new contracts and have been reluctant to accept offers which have come in without sales effort.

Refining, taken by itself, has not been profitable as an undertaking since the war, particularly in the Mid-Continent field. Soon after the war the marginal contracts began to cause refiners to lose important sums. Buyers stayed by the refiners when it was profitable to do so but bought on the spot market when it was below the contract price. Marginal contracts were replaced later by the market date of shipment agreements. But intense competition of the overbuilt refining industry caused these agreements to be executed with guaranteed margins to the jobber. One result of the unsatisfactory contract relationship between buyer and seller was

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MODEL 215 "Lubri-Kit" made only by Bennett is a complete, self-contained 16 gallon capacity all-metal lube dispensing unit 9½" wide x 16" deep x 26" high over all, with all metal pump having locking handle; weatherproofed fill opening having heavy cast locking cover; self-draining metal gauge stick, readable at all times and having hooded handle which seals opening against rain and dust. The low price of Lubri-Kit (due to Bennett intensive specialization and large volume production), together with its supreme quality, has caused oil marketers to place Lubri-Kit on duty in public and private garages from coast to coast.

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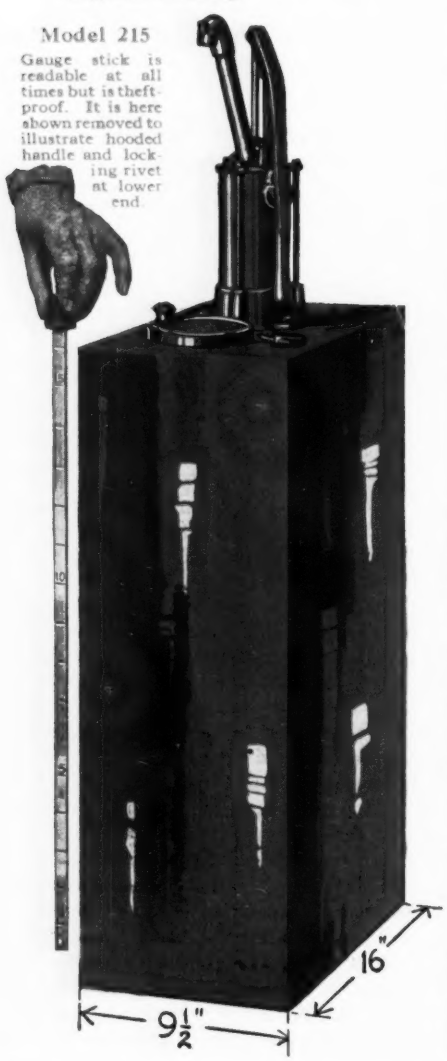
Model 215

Gauge stick is readable at all times but is theft-proof. It is here shown removed to illustrate hooded handle and locking rivet at lower end.



the development of refinery owned chain gasoline stations.

The present trend of the industry seems to be away from contracts which are one-sided. While demand is equal to, or a little ahead of the current supply, refiners are taking the attitude that the buyer should make some guarantees to the jobber if he is to receive some assurances of a living margin in lean times. Where there is no maximum as well as minimum for the jobber's margin the refiner would prefer to sell entirely on the spot market.

To illustrate further the growth of the spot market Fig. 2 has been prepared which shows the total number of spot gasoline sales to jobbers each week since Jan. 1, the daily average number of cars sold each month and the average spot price of gasoline by weeks.

The price curve of 58-60 U. S. Motor gasoline since the first of the year is a remarkable record of a strong market. It will be observed that the price has been higher each week than in the preceding week with but two exceptions. In the week ended Jan. 14 the price dropped below the first week of the month and after a recovery in the following week there was a second drop in the week ended Jan. 25. From that time onward prices have stepped upward steadily, sometimes as much as a quarter of a cent and sometimes as little as one one-hundredth of a cent per gallon.

The daily average number of cars sold has risen except for the month of June. In January the average spot sales to jobbers were 74.5 cars per day. In March the average was up to 111 cars, April 130 and May 152 cars. In June the average dropped to 141 cars per day as jobbers began to work off their earlier spot accumulations and drew against contracts as heavily as possible. The tremendous demand for gasoline over the Fourth of July brought the average for that month up to 160 cars per day when nearly 1,100 cars per week were sold during the first two weeks.

Uncertainty of conditions caused by the advance in crude and tank wagon prices caused a drop in sales late in July but demand is at such a high level in the Mid-Continent trade territory that the curve of sales is expected to rise above 1,000 cars per week again in August.

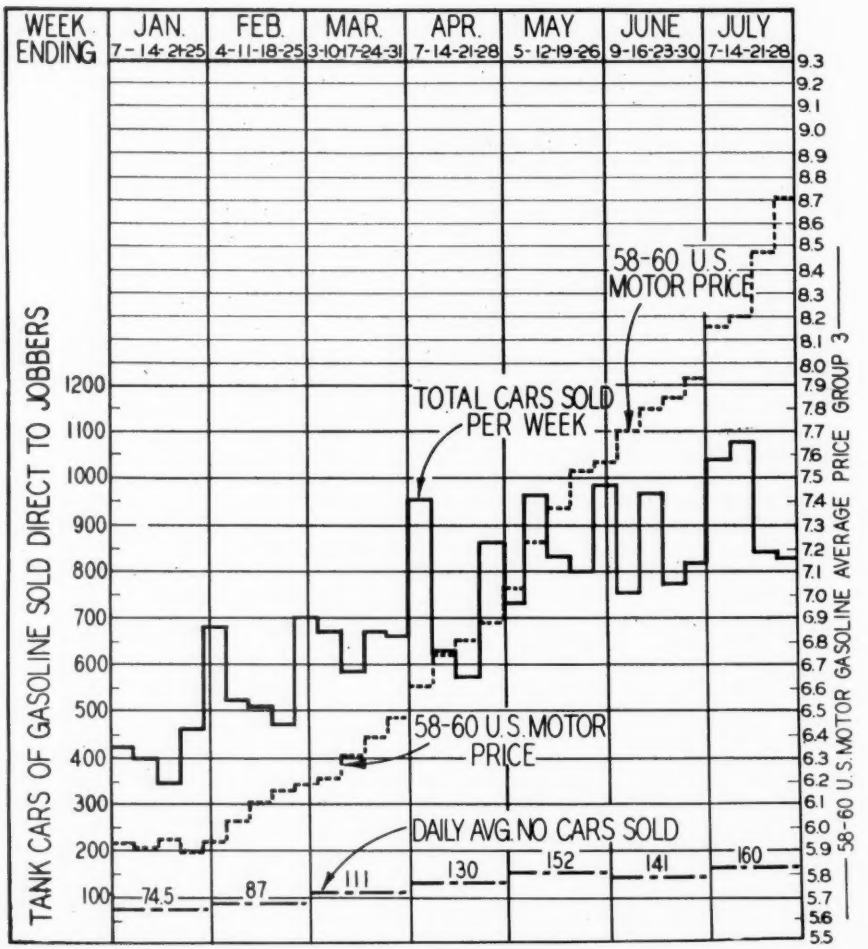


Fig. 2—Actual volume of gasoline sold direct to jobbers by Oklahoma refiners operating 83 per cent of the state's capacity by weeks. Daily average number of cars sold and weekly averages of the weighted average price of 58-60 U. S. Motor gasoline in Group 3. All data from records of Platt's Oilgram

How Important Petroleum Tests Are Applied and What They Show

THIS is the fifth installment of the treatise on "Significance of Tests, prepared by a sub-committee of Committee D-2 on petroleum products of the American Society for Testing Materials. The work is being published serially in NATIONAL PETROLEUM NEWS *by special permission.*

The purpose of the treatise is to tell in simple language the object of each of the recognized tests used by buyers and sellers of petroleum products, and their relation to quality of products. The first installment was published on page 60 *of the July* 11 *issue of* NATIONAL PETROLEUM NEWS *and the second on page* 26 *of the July* 18 *issue, the third on page* 29 *of the July* 25 *issue and the fourth on page* 80 *of the Aug.* 1 *issue.*

THE group of petroleum products classed as illuminating oils comprises the products which are burned in wick burners for the production of light or heat. The term kerosene is sometimes regarded as synonymous for illuminating oil, but certain grades of kerosene sold for use in internal combustion engines and for vaporizing or atomizing burners cannot be classed as illuminating oil. The term illuminating oils also includes products which cannot be designated as kerosene.

The essential property of illuminating oil is that it shall burn satisfactorily in a wick burner. Ordinary kerosene is used in many types of equipment, including both lamps and heaters, and must be of a quality suitable for all the equipment in which it is likely to be used. Special grades of kerosene are required for uses which involve burning for relatively long periods without attention. In this class are the so-called long-time burning oils used in railroad semaphore lamps, and the incubator oils.

There are also a number of minor uses for illuminating oil of high flash point, for example, in lamps used in railway coaches, and for this service a product known variously as 300 Oil or Mineral Seal Oil is employed. Another illuminating oil is the so-called railroad signal oil which is used in hand lanterns and which must possess the property of burning with a flame so strong and steady that it cannot be extinguished by the necessary swinging of the lanterns.

The only conclusive method for determining the quality of an illuminating oil is to make a burning test in the equipment in which it is to be used. This is not generally practicable, and the next best procedure is to test it in certain selected types of equipment that are known to be more severe in their requirements of quality than the average equipment likely to be encountered in actual use. There are also a number of physical and chemical tests which are intended to indicate burning quality of illuminating oil, but these are of chief importance to the refiner who desires to ascertain what particular property is responsible for the failure of a product to give a satisfactory burning test.

Scope of Methods: *Burning Tests for Kerosene.*—The A.S.T.M. standard method of test D 187—27[1] is applicable to kerosene which is used in ordinary types of wick burners, such as household lamps, oil heaters and oil cookstoves. The test burner is of the flat wick type and is of more or less obsolete design, especially selected to magnify defects in quality which might not be observed if the oil were used in the improved types of burners now generally available.

Burning Test for Long Time Burning Oil.—The A.S.T.M. standard method of test D 219—27[2] is applicable to kerosene to be used in railway semaphore lamps and in other wick burners, which due to their design or method of use require very highly refined oil.

Burning Test for Mineral Seal Oil. The A.S.T.M. standard method of test D 239—27[3] is intended for the determination of the burning quality of the special illuminating oil known to the trade as mineral seal oil or 300 oil and involves the use of a standard type of burner used in railway coach lamps.

Burning Test for Signal Oil.—The A.S.T.M. has not standardized a method for testing signal oils, but one which has been described in print is Method 210.5 appearing on page 64 of Bureau of Mines *Technical Paper No.* 323. This method is not specific with regard to equipment or details of procedure and cannot be regarded as a standard method.

Distillation Test for Kerosene.—The A.S.T.M. standard method of test D 86—27 is applicable to kerosene but not to 300 oil or signal oil.

Sulfur Determination.—The A.S.T.M. tentative method of test D 90—26 T is applicable to all types of illuminating oil.

Viscosity Test for Kerosene.—The society has not standardized a method for determining the viscosity of kerosene. The Saybolt thermo-viscometer and the Ubbelohde viscosimeter are commercial instruments suitable for testing kerosene.

Flock Test for Kerosene.—The so-called flock test, which indicates the presence of certain inorganic impurities, has not been standardized by the society, but is described in Bureau of Mines *Technical Paper No.* 323*B*, page 68 (Methods 130.1 and 130.2) and is applicable to kerosene and 300 oil.

Significance of Results: Burning tests of illuminating oils are essentially performance tests, and represent a direct method of determining the quality of the oils for the purposes intended. It is, of course, impossible to make such tests in all kinds of commercial equipment, or under all possible conditions (including location, time, temperature, air currents and cleanliness). These difficulties are overcome, in part at least, by the selection of burning test equipment known to be severe on the oil and by extending the test beyond the average time interval between cleanings in the ordinary use of the lamp.

None of the burning test methods mentioned above, or for that matter none that has ever been devised, gives results that can be reported adequately in numerical terms. Their real usefulness lies in the fact that they prescribe efficient procedure for comparing the quality of different samples or grades of oil, particularly with respect to details of behavior. The subject of interpreting results of burning tests cannot be discussed adequately in writing, and, as a matter of fact, there is no substitute for actual experience. It is relatively easy to tell a very good from a very bad oil, but this question rarely comes up; the usual need is for information as to whether an oil is slightly better or worse than standard, and to supply this information, it is necessary to rely on the observations of a skilled operator and to interpret them in terms of what is known of the service requirements of the product.

The theoretically perfect illuminating oil is one that would burn for an infinite period of time without

1 1927 Book of A. S. T. M. Standards, Part II, p. 364.

2 *Ibid.*, p. 370.

3 *Ibid.*, p. 374.

FRY METER SYSTEM

The industry's latest gallonage getter!

The letter reproduced on the opposite page is typical of scores we receive. Other operators report the same satisfaction. Many say the Fry Meter System has increased their gasoline business from 40 to 50%!

The Fry Meter System is bringing home the bacon. *It does* increase gas business.

With this Meter System an operator can handle a larger number of cars per hour, per day, per year, for he is always at end of hose. He is able to do much larger "fill 'er up" business.

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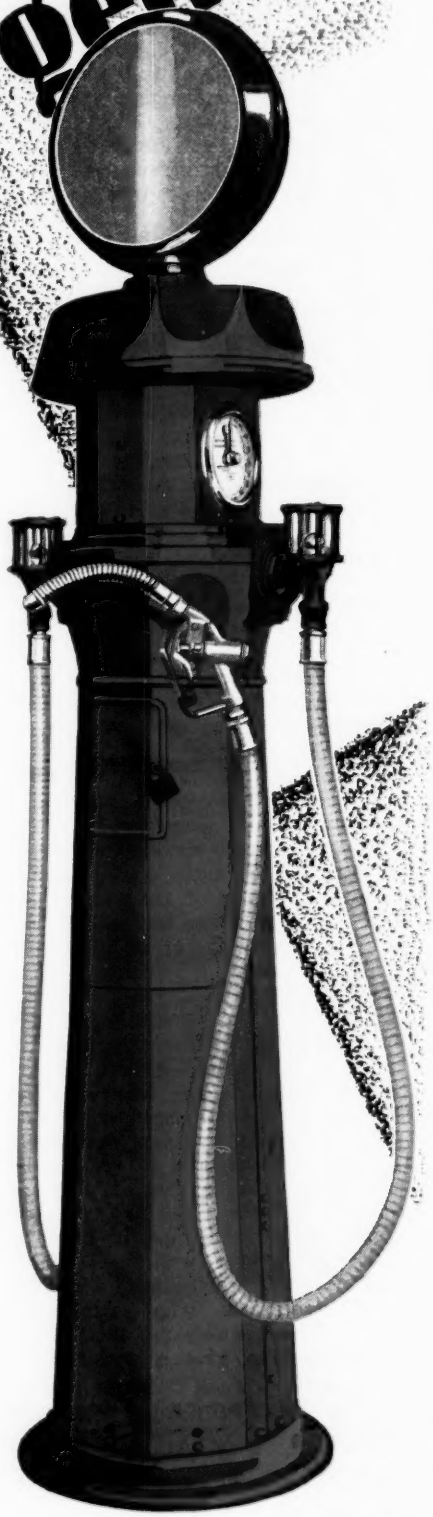


change in the shape and size of the flame, without change in wick, without fouling any part of the burning equipment, and without the production of odorous products of combustion. This ideal, of course, has never been attained, and the market products which come nearest to it are so costly to produce and so limited in quantity that they cannot be used as normal standards of quality. The practical requirement is oil which will give the results that the user expects, and this puts the question of observations and interpretation flatly on the basis of experience and judgment of the tester. About all that can be done in the present connection is to discuss briefly the observations that are of importance and the deficiencies in quality that may be encountered.

The most important features are shape and size of the flame. Oils are occasionally encountered which have a viscosity so low that flame size increases, or so high that it decreases, during the period of burning. Generally, however, changes in flame size or shape are due to changes in that portion of the wick which feeds the flame. An incrustation always forms on the wick, and is not objectionable unless it affects the flame. Some types of wick crust are "bushy" and increase flame size; others tend to enclose the surface of the wick and cause flame shrinkage. The worst feature, however, is an irregular deposit, sometimes localized through the formation of mushrooms ("ears," "niggers," "toadstools") which produces distortion. A distorted flame usually generates smoke which, from the point of view of the user, is the worst thing that can happen.

The condition of the chimney at the end of the test is important. Satisfactory oil should not cloud or smoke the chimney, thereby obscuring the light. A black sooty deposit is obviously highly objectionable, but the tester must always assure himself that it is not due to drafts or to improper testing. A heavy whitish deposit nearly always forms when a new chimney is put into service, and the condition of the chimney should always be interpreted with this in mind.

While burning tests on illuminating oils cannot be made without experience and strict attention to detail, and while the judgment of the operator plays a greater part in the interpretation of the tests than for most tests of other petroleum products, the fact remains that they furnish the only reliable means for the ultimate estimation of the quality of illuminating oils.

The distillation test, the flock test, and the viscosity test are of value only to the refiner, as a means of determining why a given oil fails to perform properly in burning test equipment. The distillation and viscosity tests, taken alone, are of little use in evaluating an illuminating oil, and are of significance only when their results are considered in connection with other known characteristics of the oil. They will tell the consumer nothing that the more direct burning tests will not tell, and their use in specifications is of questionable value.

The sulfur determination is a means of giving quantitative expression to the amount of sulfur dioxide which is likely to be liberated when the oil is burned in closed rooms. For this reason it is of considerable value in supplementing the burning test on kerosene for household use. For long-time burning oil, or other illuminating oil to be burned out of doors, the sulfur content is of no direct importance, its indirect effect being adequately covered by the lamp burning test.

The flock test, which was formerly considered to be of great importance as an indicator of proper refining, has lost most of its significance in recent years. It tells nothing that a burning test will not also reveal, and its inclusion in a specification is an entirely unnecessary complication.

WICK FEED TEST

RECIPROCATING steam engines for marine service are lubricated by oil passing through wool wicks to moving parts and it is necessary that the oil contain no impurities that would clog the wicks. The society has not standardized a procedure for measuring this quality.

A method that may be employed is described in Bureau of Mines *Technical Paper No. 323-B*, page 69. The test requires 14 days. It involves measuring the quantity of oil lifted by the force of capillarity through a specially prepared wool wick. Observations are made at the expiration of 24 hours, 48 hours and 14 days. This test simulates conditions of service, and interpretation is based on comparison with results obtained on oils known to be satisfactory for this type of lubrication.

WATER AND SEDIMENT

THE determination of water and insoluble solid impurities is one of the most important tests made on crude petroleum and some of its products. The methods employed are simple in principle but in some cases involve empirical features. The three most important laboratory test methods are the centrifugal method for both water and sediment, the distillation method for water, and the extraction method for sediment.

Water and sediment by centrifuge, frequently designated as "B.S. and Water," is the percentage by volume of the aqueous layer, including sediment and incompletely broken emulsion, separated when the oil under test is centrifuged under specified conditions.

Water by distillation is the volume of water as determined by a distillation test made according to correct procedure. This determination is practically independent of empirical factors and the procedure which is frequently prescribed represents the most convenient but not the only accurate method of making the test.

Sediment by extraction is the percentage by weight of insoluble material which exists in particles of sufficient size to be retained by a porous filter of specified characteristics. This method is, of course, highly empirical.

Scope of Methods: *Water and Sediment by Centrifuge.*—The A.S.T.M. standard method of test for water and sediment in petroleum products, by means of centrifuge (D 96—24)[1] is the most desirable of the various methods of its type. It involves diluting the oil to be tested with benzol and centrifuging under specified conditions. This method is convenient and ordinarily yields closely reproducible results, but is, nevertheless, empirical. Its chief disadvantage is that, when applied to oils of too high viscosity, it may not effect complete separation of the water and suspended solids.

Other centrifugal methods, not standardized by the society, involve the use of petroleum naphtha and carbon disulfide as diluents. In some cases these diluents are highly unsuitable and in no case are they preferable to benzol.

Water by Distillation.—The A.S.T.M. standard method of test for water in petroleum products and other bituminous materials (D 95—27)[2] is a convenient and accurate procedure for determining the water content of all oils. It involves distilling a measured quantity of oil, mixed with a specified diluent, and collecting the distillate in a graduated receiver, so designed and attached as to permit the excess of the non-aqueous layer of the distillate to return continuously to the distilling flask or retort. The one serious limitation of the distillation method is that it determines water only and not sediment and water.

Sediment by Extraction.—No method of the determination of sediment has been standardized by the society, but Method 300.2, page 78, Bureau of Mines *Technical Paper No. 323B*, outlines a procedure which is rather generally employed for testing the heavier grades of fuel oil. This method determines gravimetrically the sediment insoluble in benzol, which is in the form of particles sufficiently coarse to be held by a porous filter of specified characteristics. The method has many undesirable features and a sub-committee of Committee D-2 is now actively engaged in an at-

1 1927 Book of Standards, Part II, p. 437.
2 1927 Book of A. S. T. M. Standards, Part II, p. 433.

PRODUCING REFINING TRANSPORTING MARKETING

CANNON BALL SERVICE
Knows No Delay...

Cushing Products are delivered promptly. CANNON BALL Service has been made possible only because of an efficient organization, who within itself produces from high grade crude; refines at its two modern refineries at Cushing & Blackwell and transports in its own tank cars direct to the Jobber Cushing Petroleum Products, known for unmatched quality.

Here is service that builds business and holds it because of quality. Communicate with us now; the Cushing proposition is interesting and profit building.

A wire or letter will bring quotations

58-60 U. S. Motor Gasoline
64-66-375 E. P. Aviation
41-43 W. W. Kerosene
36-38 Straw Distillate
32-36 Gas Oil Uncracked
22-26 Fuel Oil (Cushing or
24-26 Fuel Oil Blackwell)

General Offices CUSHING, OKLAHOMA

CUSHING
Refining & Gasoline Co.
Refineries At CUSHING & BLACKWELL, OKLAHOMA

There is a constant market in used equipment

Take advantage of the savings possible by buying what you need or selling what you don't need.

An advertisement in our classified section costs only $4 an inch with a border and display heading. Without a border 10 cents a word, minimum charge $3.

Tell them your needs in next week's issue.

tempt to provide a more suitable test.

Other Methods for Water and Sediment.—None of the qualitative methods for determining the presence of water and sediment in oil has been standardized but those of chief importance are so obvious that this is unnecessary. In products which are normally transparent, the presence of water or sediment is determined by visual examination of a sample, in a transparent container. Water may be observed either as a continuous layer, as drops, or, if finely dispersed, as a cloud or haze. With electric insulating oils the so-called breakdown voltage test indicates the presence not only of traces of dissolved water but of other impurities which conduct electric current. The presence of more than traces of moisture in non-transparent lubricating oils is evidenced by characteristic frothing upon heating or in the course of the flash test.

A gravity settling test is sometimes employed for the estimation of "B.S. and Water." Tests of this type, if properly standardized, yield reproducible results with certain of the less viscous oils but are not desirable except when the laboratory facilities do not permit the use of a centrifuge.

There is no standard method for determining the ash content of oil, but, as empirical factors are not involved, a definitely prescribed procedure is unnecessary. All that is essential is to burn a weighed quantity of oil, ignite, and weigh the ash. The one major precaution is to avoid mechanical losses during the processes of burning and final ignition.

Significance of Results: For fully refined petroleum products it is customary and practical to specify freedom from water and sediment, as indicated by the transparency and "bright" appearance of a 4-oz. sample. Certain of the heavier lubricating oils are likely to contain a trace of water and it is customary to rely upon the behavior of the oil during the flash test as an indication of this. If an excessive amount of water is indicated, it may be determined quantitatively, preferably by a modification of the standard distillation method, using a test portion sufficiently large to yield at least 0.2 cc. of water.

Crude petroleum and semi-refined products, such as fuel oil and gas oil, frequently contain measurable quantities of water and sediment and are usually subjected to quantitative tests for one or both of these impurities. The A.S.T.M. centrifuge test is generally employed for gas oil and for all but the heavier and more viscous fuel oils and crude oils. The results obtained are admittedly less accurate than those obtainable by the distillation method, but the agreement between check tests is satisfactory.

Oil Barrel Pumps *and* Round Dispensing Units

WIZARD

No. R-5510

No. R-5520

No. R-5530

The wide range of (round) lubricating oil units shown herewith are designed to meet certain specific requirements in merchandising and dispensing oils for the filling station, garage, manufacturing plant, farm and home garage.

Wizard units give you the edge on competition.

The baked enamel finish on all Wizard products makes them especially attractive and durable.

R-1571

Wizard pumps are measure-controlled with combination 1½″ and 2″ screw base or bolted base. Telescopic intake pipe to fit 15 to 55 gallon barrels. Oak tanned special treated leather piston, a positive non-drip nozzle with bottle filling tube. Made with automatic self closing dust and rainproof return tube or with drain pan, screen and cover.

No. 10 Oil Pump

No. 20 Oil Pump

Wizard No. R-1571—a 15 gallon Junior Dispenser with No. 71 Hand Plunger Pump, delivering one-half pint to the stroke. Has 6″ fill opening, arranged for padlock. An excellent unit for farmer and home garage.

No. 70
Hand Plunger
Type

THE NATIONAL STEEL BARREL CO.

3860 East 91st Street **Cleveland, Ohio**

Branch Offices in Principal Cities

OIL, GREASE, ALCOHOL AND KEROSENE EQUIPMENT

STEEL BARRELS for all purposes

Arrow Oil Co.'s super service station on the Lincoln highway in Wooster, O.

Centrally Located Super Service Station Built by Ohio Marketer

By Roger B. Stafford
N. P. N. STAFF WRITER

WOOSTER, O., Aug. 10

WHEN the Arrow Oil Co. opened its super service station here the middle of July it was a civic affair. Hundreds of motorists from Wooster and surrounding country called to inspect one of the best automobile servicing plants in Ohio. The business the first day amounted to more than $1200.

After two weeks' operation Ross K. Shoolroy, president and general manager of the Arrow company, is so pleased with the super service station idea that he is seriously considering building no more filling stations of the ordinary type, leaving that business to individual dealers, and having his own company concentrate its retail business in the super stations centrally located in good business communities. Under this plan Arrow would continue to serve its tank wagon trade, dealer and commercial accounts.

The Wooster station is centrally located. It is only three or four blocks from the center of the business district on Liberty st., which is part of the Lincoln highway and the main thoroughfare of the city. It is only about five minutes' drive from any part of the town. It is one of two stations the Arrow company has in Wooster. The other is at the edge of town on the Cleveland-Columbus-Cincinnati highway and at the company's bulk plant.

The new super service station is on a lot approximately 100 x 150 feet. There are two buildings, one the filling station, and the other the super service building.

Both are built of Glenmont sandstone which is quarried not far from Wooster. The roofs are of vari-colored asbestos shingles. Three sides of the L-shaped super service building are almost wholly of glass. The end nearest the street contains a large show window.

The main part of the super service building is about 60 x 100 feet. It contains two greasing pits with lubricating oil storage under the ground level. There is a wash rack at one end and in one corner at the rear is a brake testing pit with Cowdrey brake testing machine. In the other rear corner are the boiler room, a toilet and shower bath for employes.

Ross K. Shoolroy, president and general manager of the Arrow Oil Co., Wooster, O. He also is a director of the Ohio Petroleum Marketers Association

In one corner at the front and connecting with tire stock and sales rooms in that part of the building which extends along one side of the lot, is a tire vulcanizing room.

The salesroom for tires and automobile necessities is at the front end of the wing of the super service building at the side of the lot.

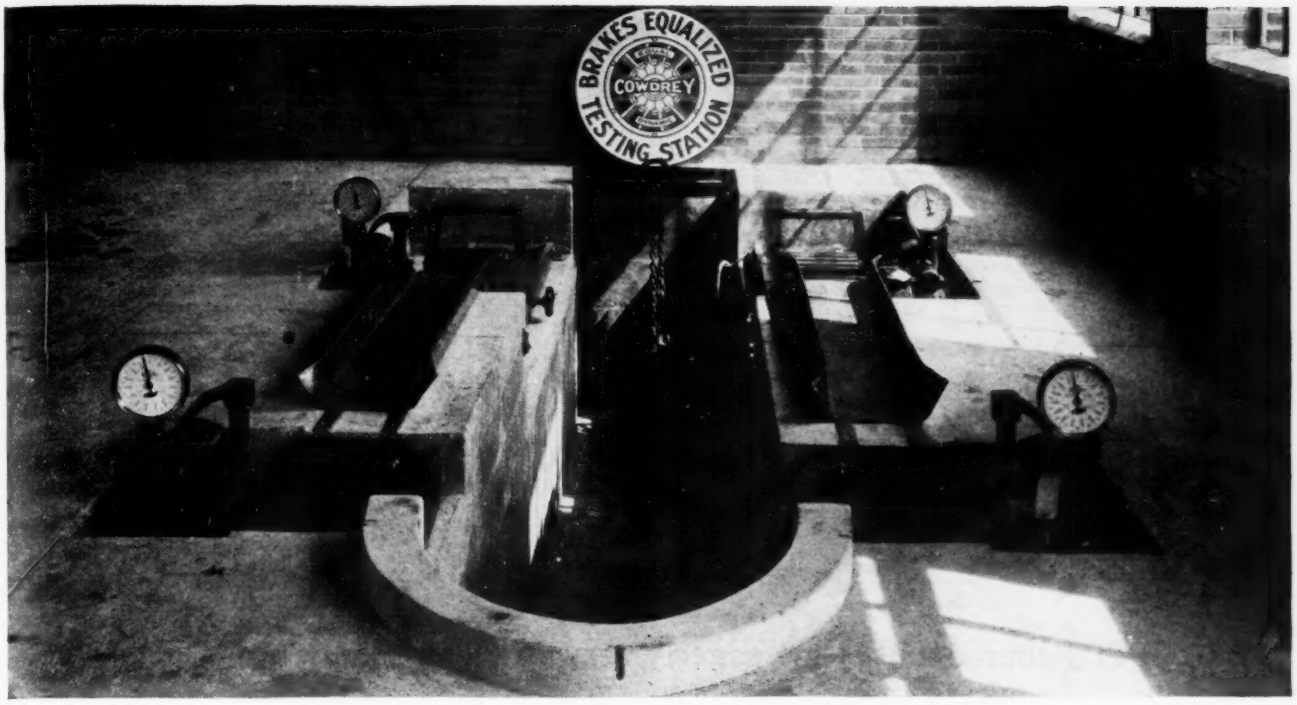
The filling station is spotted midway between this wing and the other side of the station lot. It has a two-drive canopy, the stone arch support of which is only a few feet back of the sidewalk. Shrubs and evergreens have been planted in this space just back of the sidewalk. The super service building with its equipment cost approximately $30,000 and the filling station $10,000.

The filling station has four double outlet, metered, wet hose dispensers. These are located at the four corners of the drive under the canopy. Each dispenser has one outlet for Arrow gasoline, the regular competitive grade. On each side of the driveway is one outlet for Arrow benzol motor fuel and one for Arrow Ethyl gasoline.

The motorist can thus get any of three grades of motor fuel no matter on which side of the drive he enters the station. A single outlet dispenser is mounted at the curb, this place of delivery still being permitted in Wooster.

The gasoline storage tanks are on a hill back of the super service building. Gasoline is delivered into the

(*Continued on Page* 85)



Cowdrey brake testing machine in the Arrow super station at Wooster, O.

ARROW AUTO SERVICE

Work Sheet No. 400

Name _____ License No. _____

Address, Street _____ City _____

Make of Car _____ Speedometer Reading _____

(1) OIL CHANGING		(4) BRAKE SERVICE	
Qts. Light @	$	Brake Adjustment	$
" Medium @		" Relining	
" Heavy @		Ft. and Size X	
" X-Heavy @		Drum Truing	
" Ford			
" Flushing			
" Radiator Alcohol			
" No Freeze or Glycerine			
Employee Total	$	Employee Total	$
(2) GREASING		(5) TIRES AND ACCESSORIES	
Chassis Lubrication	$	Firestone X @	$
Spring "		Oldfield X @	
Trans. "		Currier X @	
Differential "		Air Way X @	
Universal Joints		Used Tires X @	
Front Wheels			
Fittings			
Employee Total	$	Employee Total	$
(3) CAR WASHING		(6) VULCANIZING	
Carwash	$	Casing	$
Nickel Polish		Tube	
Car Polish		Trade-ins	
Employee Total	$	Employee Total	$

(7) STORAGE

Grand Total $

Every customer is entitled to (1) Battery inspected and refilled. (2) Tires inflated. (3) Radiator filled and Windshield Cleaned. SEE THAT HE GETS IT.

Sample work sheet used by Arrow Oil Co., Wooster, O., at its super service station

(*Continued from Page* 80)

storage tanks from tank trucks by gravity and the motor fuel flows through the dispensers by gravity. This topographical advantage results in a considerable saving in electricity.

The filling station building contains ample sales space and storage facilities for motor oils and greases. Most of the oil sales are quart sales because all crankcase changes are made in the super service building which has its own oil storage. In the filling station is a small storage room, and toilet rooms for men and women. It has a small hot water heating plant in which gas is burned.

The super service building will be heated with steam. A sectional boiler has been installed and waste crankcase oil will be burned under it.

There are three wide doors into the main super service building. One door is so placed that the motorist may drive his car straight to the brake testing machine. Another gives access to the two oil and grease pits. The third is intended primarily for the use of car wash and tire customers.

The doors are rolled electrically overhead. A station attendant may press a button and a motor attached to the upper part of a door pulls it up out of the way. To close it is necessary only to press another button. The doors are equipped with automatic stops for both opening and closing operations.

The motor oils, all the usual grades of two brands of oil, are placed in underground tanks to one side of one pit. The oil pumps are in a row at the usual working height above the

(*Continued on Page* 89)

Hot Pennies

PROFITS offered a little too eagerly very often leave only burnt fingers to pay for taking them up.

Right now, all along the main stems of the petroleum industry — from raw crude sources to finished products — there's heavy, almost desperate, pressure to secure more outlets. From bigger quarters than you'd expect, every imaginable sort of deal, proposition, offer and inducement is flung out to get you to take on this line or that. And always "profits" are the bait.

Look well to it that such pennies don't prove too hot to hold. It's a blow to wake up some fine day to find that you've risked your good name, time and reputation on some brand or connection that has dumped you cold—by being split, absorbed, merged or snuffed out —as likely as not on terms that nullify your supposed exclusive deal or put competitors into your very front yard with every advantage that you were supposed to enjoy alone.

Wadhams of Wisconsin

Wadhams Oil Co., Milwaukee, *Established 1879*

—is a substantial, old-line institution offering you a perfected "connection proposition" on a sounder basis—with a responsibility that sets at its highest valuation your personal following, your local entrenchment, your good name and prestige—and meets these half way with an equal measure of high reputation, accepted brands, proved cooperation in sales and the tremendous momentum of long-establishment and habitual success.

It is not a proposition for firms or individuals having merely the "day's wages" outlook on operation, but is for the ambitious retailer or hemmed-in distributor who wishes to build a real business under advantageous auspices and in association with a source that plunges him into no risk of misplaced confidence, or heartless betrayal of his own distinctly personal forces and value.

Accept the Wadhams invitation to

Greater Sales

NOTE: Write a letter today to Wadhams.

(*Continued from Page* 85)

ground level. The tanks are filled through manholes in the floor.

The wash rack is unusual. It consists of two L iron runways for the car. Beneath these runways, the rack is excavated about 18 inches. The drain is near one end of the bottom of the pit.

The runways are supported in the center by heavy concrete blocks. The pit is slightly wider than the overall width of a car so that most of the water falls into the pit and does not spread over the nearby floor. This keeps the floor about the wash rack much dryer than if the floor were only sloped to a drain.

The laundry is equipped with a high pressure washing unit and uses warm water. An automatic water heater in connection delivers 16 gallons of hot water a minute to the rack if that volume is needed.

Two water hose are attached to the wall at the head of the rack so two men may work on a car at once. The pit enables them to do a much better job on the chassis than could be done were they forced to stoop to reach chassis parts.

After the cars are washed they are stored indoors until the owners call for them. Special emphasis is made by the Arrow company that washed and cleaned cars are kept out of the dust. Charges for washing vary. The minimum price is $1.50 for small closed cars. Large sedans cost about $1 more. Extra charge also is made for wire wheels although the base price for Fords takes into consideration the fact that from now on most of the Fords that will reach the laundry will be equipped with wire wheels. A 25-cent discount is made on Fords with wooden wheels. Extra charges also are made for nickel and body polishes.

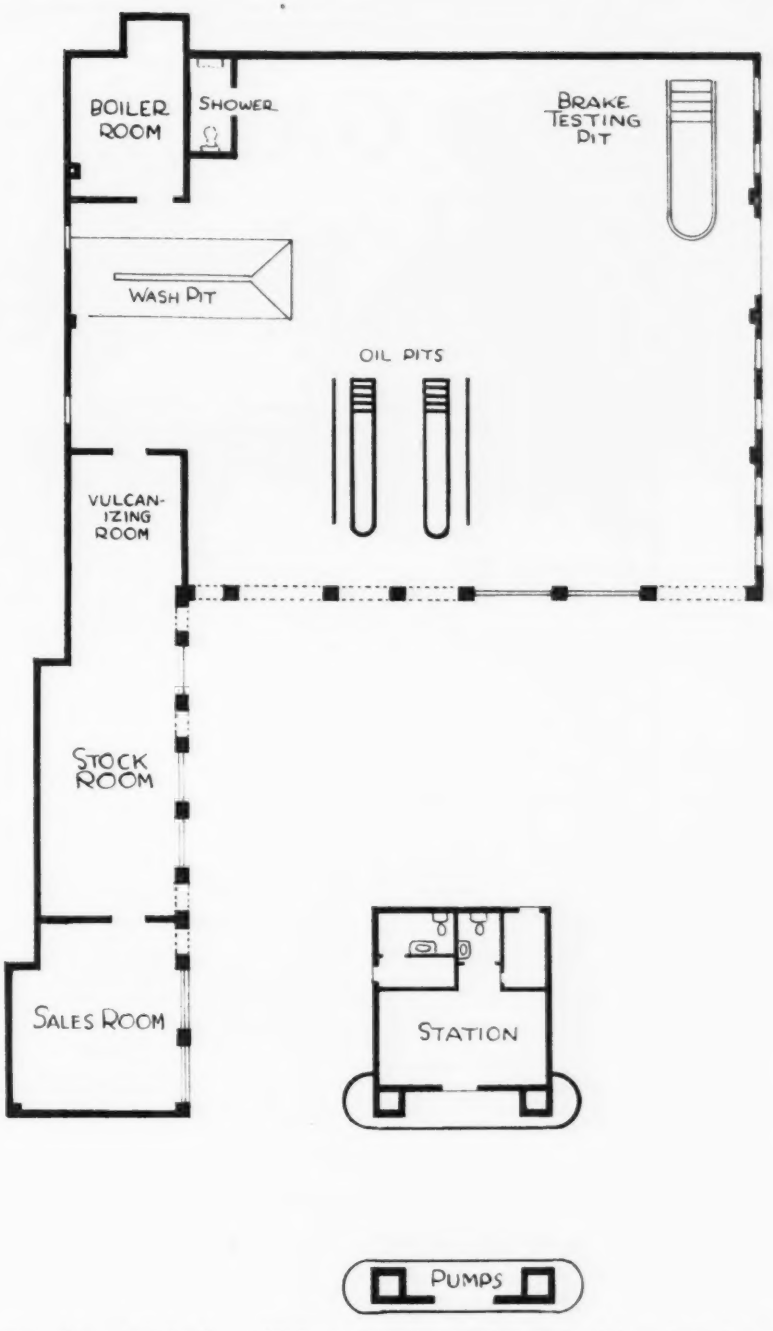
Brakes are tested free but a charge of $1 is made for equalizing two-wheel brakes and $1.50 for four-wheel brakes. Relining is done but the price varies with the make of car.

A new service which will be operative shortly is a brake drum truing service. A drum lathe did not arrive in time for the opening of the station but will soon be one of the station's featured services.

Drums of automobiles, except those in the high priced field, are not trued at the factories. Truing would slacken production. Untrue drums mean faulty braking, Mr. Shoolroy explained, and to make the brake service comprehensive, this work will be done at his station. A wheel with its drums is put on the lathe and all uneven spots are turned off. This also is the method used to repair scored brake drums.

When a relining job is done the drums will be trued, any scores removed and the rivets in all new linings will be countersunk.

There are some good sized hills around Wooster and Mr. Shoolroy expects that his brake service, the first of its kind in this part of Ohio, will be a wonderful puller for the gasoline and oil trade. The testing machine cost around $1600.



General layout of the Arrow Oil Co. super station at Wooster, O. A few minor changes were made during construction. The door to the salesroom was shifted to the front corner of the side and one door was placed in front of the oil pits instead of two as shown. The street end of the salesroom contains a show window

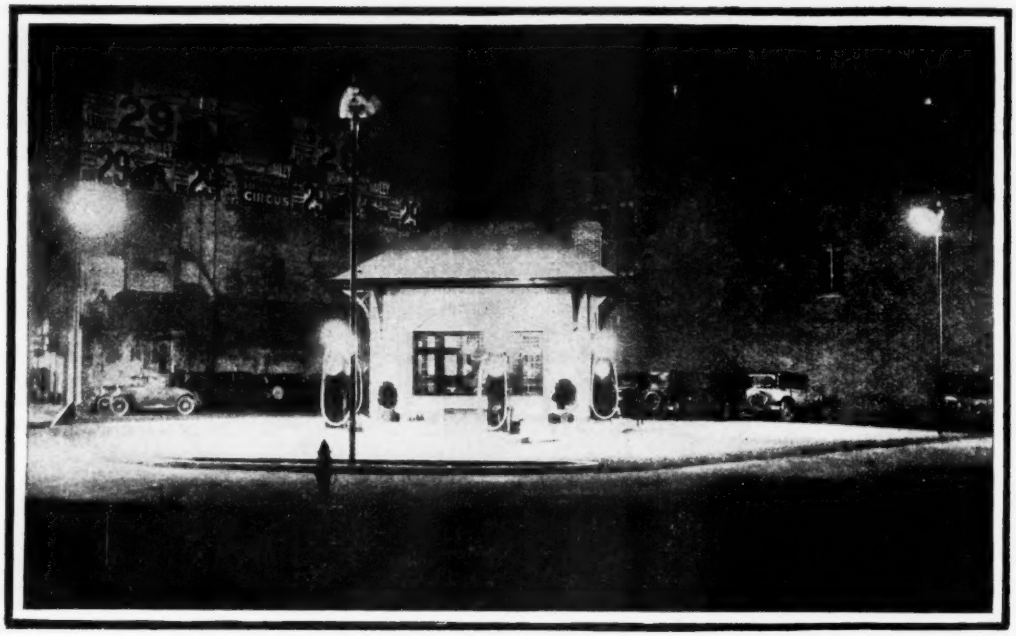
The latest electric vulcanizing machines have been installed and all kinds of tire repair work will be done. Arrow handles the Firestone brands in all sizes including the heavy duty cords for trucks.

High pressure pneumatic greasers are used for the chassis lubrication. Crankcase oil is drained into a reservoir, filtered and will be used for heating the building.

Sales promotion work is directed toward having cars brought in for complete service. This service includes having the brakes tested on the Cowdrey machine. Before any brakes are tested the tires are always inflated to the pressures recommended by the tire manufacturers. Battery testing and filling with water is a free service but no battery repairs or recharging is done. A business friend of Mr. Shoolroy's has a battery station that adjoins the super station. The main battery business goes to that friend. The car would then be washed, the motor oil changed and the chassis greased.

In the daytime the station has excellent natural illumination. The artificial lighting scheme was worked out

GASOLINE STATION LIGHTING



Floodlighting is the ideal way to light gasoline stations.

A sharp contrast in intensity between the station and its surroundings is necessary to produce effective lighting.

This contrast can only be obtained by proper floodlighting.

Type MSA, a New Floodlight, meets these requirements.

Type LPH
Safety Hand Lamp

CROUSE-HINDS COMPANY

ESTABLISHED 1897

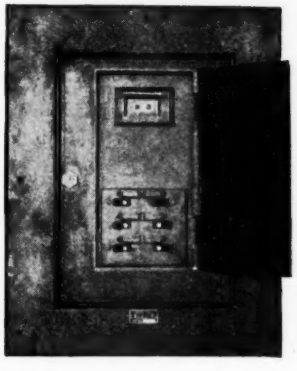
SYRACUSE, N. Y., U. S. A.

Sales Offices

NEW YORK
PHILADELPHIA
PITTSBURGH
DETROIT
CINCINNATI
BOSTON
CLEVELAND
ATLANTA
CHICAGO
ST. LOUIS
SAN FRANCISCO
MINNEAPOLIS
MILWAUKEE

CH-374

LIGHT SELLS GAS



Safety Type Panel

A New Floodlight, Type MSA, is especially designed for gasoline stations.

Highly Efficient—Wide Spread—Short Range.

Correct light distribution for maximum results.

Recommendations for lighting any service station will be furnished upon receipt of blueprint and complete details.

CROUSE-HINDS COMPANY

ESTABLISHED 1897

SYRACUSE, N. Y., U. S. A.

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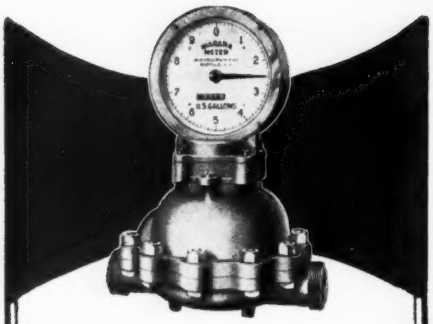
MINNEAPOLIS
MILWAUKEE

CH-373



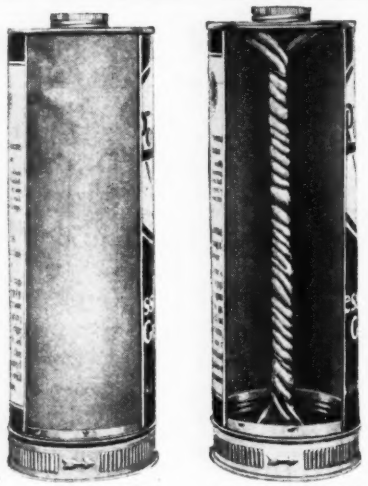
Automatic Measurement

WHEREVER automatic measuring is desired, Niagara Oil Meters are in constant demand because of their accuracy and dependability in measuring all petroleum products. If you are still depending on measurements taken by stick gauges, pails, etc., many gallons are passing through the pipes unchecked and extra profits are slipping through your fingers.

Decide today to investigate the real economies of Niagara Oil Meters. They are made in sizes ranging from ½ inch to 6 inches, among which is a type and size that will meet your individual requirements.

BUFFALO METER COMPANY
2889 Main Street Buffalo, New York

Niagara Oil Meters
"The Constant Guardians of Liquid Profits"



The CANTUBE full

The CANTUBE empty

Turn the bottom and out it comes!

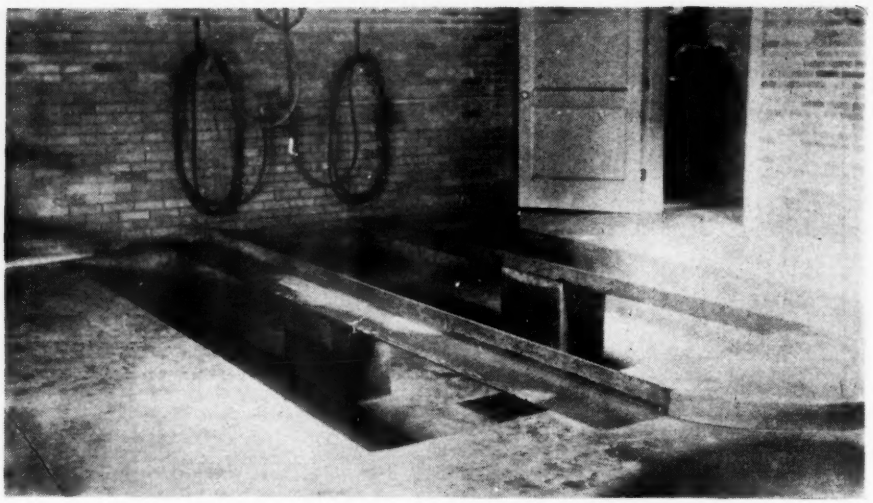
Change to the CANTUBE

way of marketing your grease. It'll pay!

The Cantube is now being made in sizes up to three pounds.

Write for literature and samples today—NOW.

NATIONAL CANTUBE CO., Inc.
1330 North Halsted St. Chicago, Illinois



Wash rack with pit at Arrow super service station at Wooster, O.

with lighting engineers from the local power company so there would be no dark corners in the station.

Flood lights concealed on nearby buildings make the station brilliant at night. There are no lights on the outside of either the filling station or the super service building except under the canopy of the former.

A circular sign attached to the front of the filling station partly overhangs the sidewalk. In the upper half of the circle in flexlume letters is the word "Benzol" and in the lower half "Ethyl." The two halves are separated by a red arrow that points toward the station. The whole sign is surrounded with a band of small electric lamps.

Between the front end of the super service building and the street is a board map of the chief highways many miles each way from Wooster and a chart of the distances from Wooster to the leading cities of Ohio, the east and middle west. The company supplies motorists with pocket maps of Ohio and adjacent states.

One of the outstanding features of the Arrow Oil Co. organization is its well trained personnel. The employes are made to feel they are just as much interested in the company as the management is. The station and department managers may become financially interested in the company in a way which means no sacrifice or great saving.

The managers are paid salaries and credited with a commission on the business their departments do. At the end of the year they may take the commission in cash or may invest it one half in the preferred stock of the Arrow company and one half in common stock.

Mr. Shoolroy trains the station salesmen to give quick and courteous service. Francis Grassman who is manager of the tire department, has been a salesman in the Arrow organization three years.

When it was decided to make him manager of the tire department he was sent to the Firestone tire repair and vulcanizing school at Akron so he could give expert service.

Ed Reich who looks after the brake service, was an experienced brake man at a garage operated by one of the large tire manufacturers in the Akron district. He also has taken a course of study in the principles underlying his work.

The opening of the station was announced in a seven-page special section of the *Wooster Daily Record*. One of the pages of the section was an advertisement paid for by 25 Wooster merchants who congratulated the Arrow Oil Co. on its enterprise.

In the company's own advertising it featured the men who are working to make the super station a success. Their pictures and short biographical sketches were published.

The remainder of the section was devoted to news stories about the station and its service and to advertisements of participated in its building.

Gasser South of Bakersfield

BAKERSFIELD, Calif., Aug. 10.—Pacific Eastern Production Co. (Gulf interests) brought in a big gasser July 26 when Union Avenue No. 3 came in with bottom of the hole at 4414 feet, plugged back from 4442 feet. The well is blowing about 2,000,000 cubic feet of gas, with a spray of oil. The casing pressure is 750 pounds, while the tubing pressure is 400 pounds. It is producing from a gas zone between 4319 and 4414 feet. This is the third well drilled in the Union Avenue area just south of Bakersfield. No. 1 well is shut down in bad condition. No. 2 refused to flow, but would make a pumper, if placed on production.

TULSA, Aug. 10.—S. F. Shaw, consulting gas lift engineer for the Carter Oil Co., is leaving the latter part of August for Roumania, where he will be engaged for a short time in the interests of the Standard Oil Co. of New Jersey.

Oil Industry Holds June Operations In Line with Market Demand

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, Aug. 13

STOCKS of crude oil in the United States were lowered 778,000 barrels in June. This was the first draft on above ground reserves of crude oil since November, 1926.

There was an increase of 242,000 barrels in liquid stocks at refineries, because of the large accumulation of fuel oil, but the net draft on all liquid stocks of petroleum held above ground was 536,000 barrels. This was the first time in many months that average demand for all refined and crude oils exceeded the new supply.

The stocks of all oils June 30—613,148,000 barrels—represented 219.2 days' supply at the June rate of demand. Stocks the end of May represented 222.8 days' supply, showing a gradual shrinking in supply value of the petroleum reserves as the April 30 stocks represented 227.7 days' supply.

Much of the credit for this showing is due the west Texas producers who have observed the production restrictions adopted for the west Texas flush pools. These producers clipped 35,000 barrels daily average from their production in June.

Gasoline demand and production was the largest in the history of the industry. Output of finished gasolines exceeded 1,000,000 barrels a day for the first time. Domestic and foreign demand for motor fuels reached the unprecedented figure of 1,127,000 barrels daily. Stocks of gasoline were lowered 2,943,000 barrels during the month.

Another feature of the report of the Bureau of Mines for June was the decline of paraffin wax stocks to the lowest point they have reached since the bureau began to collect wax statistics in July, 1917.

Runs of all oils to stills in June set a record.

The statistics presented herewith were collected from 326 refineries which operated in June at 81 per cent of their rated daily crude capacity, 3,112,000 barrels. The Bureau's May report covered 321 refineries which were operated at only 80 per cent of their rated capacity.

Crude Oil

Production restrictions in effect in west Texas may be credited with the fall in daily average crude oil production of 10,800 barrels in June from the May average. The June average was 2,415,600 barrels daily.

Inland Texas fields, including those of west Texas, reduced daily average production 29,900 barrels. Gulf Coastal Texas decreased production 7400 barrels, making a total reduction in the state's daily average 37,300 barrels.

Oklahoma's average production increased only 500 barrels daily average to 634,800 barrels, but in California production rose 15,200 barrels average to 638,800 barrels, in Arkansas 11,300 barrels to 102,900 barrels, and Gulf Coastal Louisiana 10,100 barrels to 25,000 barrels. A decline of 2400 barrels in average inland Louisiana production brought the state's net increase down to 7700 barrels.

Kansas production fell 1900 barrels daily average, Kentucky 2300 barrels and West Virginia 1200 barrels. Changes in other states were less than 1000 barrels daily average.

In the first half of 1928; 435,288,000 barrels of crude were produced in the United States. This was a decrease of 2,768,000 barrels or 0.63 per cent from production in the first half of 1927. The Appalachian field produced 1.69 per cent more oil this year, Michigan 3.70 per cent more and the Mid-Continent 2.12 per cent more.

The Lima-Indiana field produced 9.75 per cent less, Illinois-Indiana 5.46 per cent less, Gulf Coast 14.77 per cent less, Rocky Mountain 7.69 per cent less and California 2.77 per cent less.

The Mid-Continent field as a whole, including west Texas, produced 22,400 barrels less daily in June than in May.

There were drafts on refiners' pipe line and tank farm stocks of crude east of California but small gains in volume of foreign crude not held by refiners and in both light and heavy California crude oil stocks.

Stocks of crude oil east of California were reduced more than 1,000,000 barrels.

Imports of crude oil were almost stationary in June. Comparative daily average imports, with origin of the oil, follow:

Origin	June Bbls.	May Bbls.
Mexico	56,800	55,600
Venezuela	124,200	131,700
Colombia	29,300	27,600
Other countries	8,100	3,400
Total	218,400	218,300

Exports of crude oil averaged 62,600 barrels daily, compared with 48,200 barrels daily in May.

Shipments of crude oil from California to eastern United States ports totaled 182,000 barrels in June, a gain of 20,000 barrels over May shipments.

Daily average production in five important producing fields were as follows in June and May:

	June	May
Seminole	277,000	290,000
Panhandle	66,000	66,000
West Texas	316,000	351,000
Seal Beach	37,000	36,000
Long Beach	194,000	181,000

Runs to Stills

Refiners set a record for the volume of throughput of crude and other charging stock in June. The average was 2,749,000 barrels a day of which 2,288,800 barrels was domestic crude, 234,100 barrels foreign crude, 135,300 barrels unfinished oils and 91,000 barrels natural gasoline.

In May, the previous record month, the average was approximately 2,693,000 barrels of all oils. The gain of 55,000 barrels in the daily average was wholly at plants east of the Mississippi river. Average runs at plants west of the river were less than the May average.

Runs at East Coast plants averaged 534,467 barrels daily. Those at Appalachian plants exceeded 100,000 barrels daily for the first time in history and at Indiana-Illinois plants passed the 300,000-barrel daily average for the first time.

In the last 18 months runs of all oils in the whole country have been increased 12.6 per cent. Runs in the same time at East Coast plants have been increased 30.9 per cent, at Appalachian plants 22.6 per cent, at Indiana-Illinois plants 50.7 per cent, at Oklahoma-Kansas plants 18.8 per cent, at Texas plants 2.9 per cent, at California plants 1.5 per cent. Runs have been reduced at Louisiana-Arkansas plants 5.1 per cent and at Rocky Mountain plants 6.1 per cent. These percentages are based on runs in January, 1927, and June, 1928.

Although the runs in the Louisiana-Arkansas districts were less in June than in the early part of 1927 they were larger than in mid-summer last year. Runs the last three months in the Rocky Mountain district were larger than since April, 1927.

Gasoline

Daily average production of gasoline in June passed the 1,000,000-bar-

rel mark for the first time in history, being 1,022,500 barrels daily. Gross gasoline output in June was slightly less than May output but refineries had one more day in May to operate.

Imports of gasoline in June averaged a little more than 7000 barrels daily, bringing the total new supply of gasoline up to approximately 1,030,000 barrels daily.

Domestic demand for gasoline averaged 967,000 barrels daily, this average exceeding the previous record domestic demand, that of August, 1927, by about 7000 barrels daily average. Exports were less than in May, averaging 160,000 barrels daily, but May exports were the largest on record and June shipments abroad the second largest.

Total daily average demand was 1,127,000 barrels in June which volume exceeded the May average demand by 28,000 barrels daily. May domestic and foreign demand was the largest previous demand. The peak demand in 1927 was in August when foreign and domestic shipments averaged 1,096,000 barrels daily.

Stocks of gasoline were lowered 2,943,000 barrels in June to 34,393,000 barrels. This latter volume was a decline of 9,375,000 barrels or 21.4 per cent in a year. Stocks June 30 represented 30.5 days' supply at the June rate of demand compared with 34 days' supply at the end of May and 41 days' supply on hand June 30, 1927.

Output of gasoline was less in June than in May in the Louisiana-Arkansas and Rocky Mountain districts but more in every other district, although runs to stills were smaller than May runs in all districts west of the Mississippi river, including California. The gain for the whole country was 2.83 per cent.

June average shipments were more than May average shipments in only the East Coast, Indiana-Illinois and Texas districts. Texas shipments, because of large exports, were up 24.68 per cent and shipments from Gulf Coastal Texas plants exceeded May shipments by 32.04 per cent.

In spite of smaller shipments from four districts east of California, stocks in every refining district outside the Pacific coast were lowered in June. Stocks in California rose 267,000 barrels.

Gasoline stocks June 30 were smaller than stocks a year before in every district but the Appalachian. The gain over a year in the Appalachian district was 200,000 barrels. The reduction in California was only 287,000 barrels.

California refiners June 30 held 12,241,000 barrels, or 35.6 per cent of the country's reserve. All seaboard plants—Pacific, Gulf and Atlantic Coast plants—held 22,957,000 barrels or 66.7 per cent of the reserve supply, approximately two thirds.

The remaining third was held by the several score plants of the Appalachian district, in which is grouped the refineries of eastern Ohio, the Indiana-Illinois district, which includes the great refineries grouped about Toledo, Chicago and St. Louis, the Mid-Continent including the Kansas City group, and the Rocky Mountain district with its large plants at and near Casper.

The tide water plants produced only 48.4 per cent of the gasoline. This seems to indicate that inland plants have been more successful in moving a larger part of their production than the seaboard plants, which were holding two thirds of the stocks.

Of the June production of gasoline 60 per cent was made by straight distilling, 31 per cent by cracking and 9 per cent from natural gasoline. The May proportions were the same as June's.

In the first half of this year 58 per cent of the gasoline produced was straight run, 32 per cent cracked and 10 per cent natural gasoline. In June East Coast plants did the most cracking, and used relatively the least natural gasoline. Percentages of gasoline produced by the various methods in June were as follows:

	Straight run	Cracked	Natural gasoline
East Coast	55	42	3
Appalachian	67	29	4
Indiana-Illinois	56	40	4
Oklahoma-Kansas	60	32	8
Texas	55	36	9
Louisiana-Arkansas	52	28	20
Rocky Mountain	51	40	9
California	74	9	17

The following summary shows briefly the gasoline situation in the first half of 1928 as compared with the situation in the first half of 1927:

1. Production 174,731,000 barrels, a gain of 13,881,000 barrels or 8.6 per cent.

2. Imports 2,245,000 barrels, a decline of 641,000 barrels or 22.2 per cent.

3. Total new supply 176,976,000 barrels, a gain of 13,240,000 barrels or 8.1 per cent.

4. Domestic shipments 148,205,000 barrels, a gain of 11,682,000 barrels, or 8.6 per cent.

5. Exports 26,701,000 barrels, a gain of 4,051,000 barrels or 17.9 per cent.

6. Total demand 174,906,000 barrels, a gain of 15,733,000 barrels or 9.9 per cent.

7. Stocks June 30 were 9,375,000 barrels, or 21.4 per cent smaller than stocks June 30, 1927.

Shipments of gasoline from California through the Panama canal to eastern ports of the United States totaled 1,589,000 barrels in June, as compared with 1,386,000 barrels in May. In the first half of 1928 the movement was 7,289,000 barrels, compared with 5,370,000 barrels in the first half of 1927, a gain of 1,919,000 barrels or 35.7 per cent this year.

Crude Oil Stocks — By Months

(Thousands of Barrels)

1927	East of Calif.	†In Calif.	Total U. S.
January	278,972	118,988	397,673
February	285,458	117,410	402,868
March	290,110	117,454	407,564
April	297,895	117,843	415,738
May	307,016	117,432	424,448
June	315,702	117,414	433,116
July	324,930	116,996	441,926
August	333,673	115,227	448,900
September	339,741	114,981	454,722
October	345,357	113,467	458,824
November	348,885	113,746	462,631
December	351,646	111,855	463,501
1928			
January	358,892	114,820	473,712
February	362,963	114,907	477,870
March	368,744	114,117	482,861
April	371,579	113,053	484,632
May	371,551	113,111	484,662
June	370,751	113,431	484,182

†Includes heavy fuels.

Gasoline Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	27,960,000	520,000	3,557,000	17,888,000	46,058,000
February	25,024,000	416,000	3,544,000	18,240,000	49,714,000
March	27,886,000	493,000	3,219,000	22,646,000	52,410,000
April	26,577,000	377,000	3,614,000	23,371,000	52,379,000
May	26,787,000	490,000	4,468,000	26,579,000	48,609,000
June	26,616,000	590,000	4,248,000	27,799,000	43,768,000
Total Six Months	160,850,000	2,886,000	22,650,000	136,523,000	43,768,000
July	28,118,000	190,000	3,223,000	29,784,000	39,069,000
August	28,010,000	348,000	4,193,000	29,779,000	33,455,000
September	27,716,000	515,000	3,539,000	28,409,000	29,738,000
October	28,903,000	365,000	3,959,000	25,497,000	29,550,000
November	28,558,000	417,000	3,724,000	24,400,000	30,401,000
December	28,512,000	282,000	3,154,000	23,718,000	32,323,000
1927 Total	330,667,000	5,003,000	44,442,000	297,928,000	.....
January, 1928	27,879,000	562,000	3,713,000	20,939,000	36,112,000
February	26,775,000	372,000	3,341,000	21,136,000	38,782,000
March	29,245,000	259,000	4,016,000	24,041,000	40,229,000
April	29,332,000	472,000	4,111,000	25,712,000	40,210,000
May	30,825,000	368,000	6,712,000	27,355,000	37,336,000
June	30,675,000	212,000	4,808,000	29,022,000	34,393,000
Total Six Months	174,731,000	2,245,000	26,701,000	148,205,000	34,393,000

Natural Gasoline

Production of natural gasoline in June averaged 110,555 barrels daily, a decline from average May production but slightly more than production in June, 1927, when production averaged 103,100 barrels daily.

Every producing district east of California reduced output in June but California increased production 1400 barrels daily average.

Stocks east of California were lowered 158,881 barrels to 615,618 barrels June 30. California manufacturers lowered stocks 2000 barrels.

Production of natural gasoline motor fuel blends was 4500 barrels less in June than in May. Stocks of this

grade of fuel were lowered almost 2000 barrels.

Kerosene

Daily average kerosene production was curtailed 4.43 per cent in June. Only three districts—the Appalachian, Indiana-Illinois, and Texas—produced more than they did in May. Shipments were larger than May from only the East Coast and Louisiana-Arkansas districts. For the entire country, shipments averaged 23.7 per cent less than May shipments. Only East Coast refineries lowered stocks. The increase in kerosene stocks in all districts totaled 833,000 barrels. However, the June 30, 1928 stocks were 197,000 barrels less than stocks June 30, 1927.

The kerosene situation in the first half of 1928 compares with that in the first half of 1927 as follows:

1. Domestic production was 1,725,000 barrels, or 6.2 per cent more.

2. Imports were 100,000 barrels or 1250.0 per cent more, imports last year having been trivial.

3. Total new supply was 1,825,000 barrels, or 6.5 per cent more.

4. Domestic demand was 785,000 barrels, or 4.2 per cent less.

5. Exports were 1,901,000 barrels, or 20.1 per cent more.

6. Total demand was 1,116,000 barrels or 4 per cent more.

Petroleum Supply and Demand — Barrels

	June 1928	*May 1928	April 1928	June 1927	1st Half 1928	1st Half 1927
Domestic Crude Production: Light	64,940,000	67,770,000	64,796,000	65,335,000	388,316,000	381,072,000
Heavy	7,586,000	7,448,000	7,331,000	9,203,000	46,972,000	56,984,000
Imports of crude oil	6,553,000	6,766,000	5,661,000	4,019,000	38,006,000	25,768,000
Imports of refined oil	712,000	702,000	1,680,000	1,448,000	6,448,000	7,702,000
Natural gasoline produced	3,317,000	3,474,000	3,469,000	3,093,000	20,332,000	18,833,000
Benzol used in blending	231,000	238,000	229,000	210,000	1,379,000	1,290,000
Total new supply of all oils	83,339,000	86,398,000	83,166,000	83,308,000	501,453,000	491,649,000
Total stocks end of preceding month	613,386,000	612,674,000	*610,206,000	559,386,000	584,184,000	519,453,000
Total supply of all oils	696,725,000	699,072,000	692,727,000	642,694,000	1,085,637,000	1,011,102,000
Exports of crude oil	1,879,000	1,493,000	1,303,000	1,410,000	8,680,000	7,539,000
Exports of refined oil	12,284,000	13,915,000	11,813,000	11,307,000	70,575,000	62,285,000
Domestic demand, crude and refined	69,712,000	69,980,000	67,582,000	66,511,000	396,212,000	378,456,000
Total demand	83,875,000	85,388,000	80,698,000	79,228,000	475,467,000	448,280,000
Total stocks of all oils end of month	613,148,000	613,684,000	612,674,000	563,466,000	613,148,000	563,466,000
Days' supply	219.2	222.8	227.7	213.3	(a) 234.7	(a) 227.5
Decrease in stocks	536,000	†1,010,000	†2,468,000	†4,071,000	†28,964,000	†44,013,000
Daily average new supply	2,778,000	2,787,000	2,772,000	2,777,000	2,755,000	2,716,000
Daily average demand	2,796,000	2,754,000	2,690,000	2,641,000	2,612,000	2,477,000
Daily average deficiency, excess of supply	18,000	‡33,000	‡82,000	‡136,000	†143,000	†239,000
Crude stocks:						
East of California: Light	319,267,000	320,382,000	321,869,000	268,217,000	See June,	See June,
Heavy	51,467,000	49,710,000	49,710,000	47,485,000	1928 Column	1927 Column
In California: Light	19,197,000	19,170,000	18,752,000	26,898,000	for stocks	for stocks
Heavy	94,234,000	93,941,000	94,301,000	90,516,000		
Total stocks of crude	484,182,000	484,960,000	484,632,000	433,116,000		
Total stocks of refined	128,318,000	127,915,000	127,210,000	129,379,000		
Stocks of natural gasoline	648,000	809,000	832,000	971,000		

*Revised †Increase ‡Excess (a) Based on half year's average demand.

Daily Average Runs to Stills — All Oils — Barrels

	East Coast	Appala.	Ind.-Ill.	Okla.-Kans.	Texas	La.-Ark.	Rocky-Mt.	Calif.	Total U. S.	
January, 1927	408,355	82,581	206,226	278,258	517,160	228,516	103,161	616,516	2,440,774	January, 1927
February	412,714	86,928	197,785	295,964	504,642	228,107	103,321	633,108	2,462,571	February
March	439,387	83,097	209,161	283,548	479,806	224,903	103,290	597,839	2,421,032	March
April	411,367	84,400	204,067	286,067	491,567	224,400	100,500	615,333	2,417,701	April
May	413,516	82,000	226,677	293,581	494,806	212,129	75,839	618,452	2,417,000	May
June	429,967	85,400	238,067	301,733	490,633	199,933	87,300	605,733	2,438,766	June
July	439,871	80,935	250,387	317,129	482,839	199,194	87,226	633,032	2,490,613	July
August	465,839	86,065	237,194	319,516	481,032	202,226	76,032	618,516	2,486,420	August
September	453,000	87,100	225,667	327,300	483,900	211,600	71,700	637,467	2,497,733	September
October	475,580	91,161	229,677	307,774	513,419	204,968	80,871	617,937	2,521,387	October
November	471,667	84,200	246,100	298,667	515,533	197,900	89,800	619,733	2,523,600	November
December	467,226	83,484	250,516	292,355	494,806	199,226	87,354	592,710	2,467,677	December
January, 1928	450,064	84,613	247,097	288,645	482,613	202,064	85,935	570,161	2,411,193	January, 1928
February	461,448	86,680	250,793	296,482	510,586	201,518	83,207	587,690	2,478,413	February
March	455,807	88,548	268,000	304,032	523,548	203,839	89,064	593,968	2,526,806	March
April	499,866	92,933	272,900	319,200	533,967	218,233	93,433	599,300	2,629,833	April
May	502,613	98,322	296,290	331,903	540,613	237,290	101,774	584,032	2,692,839	May
June	534,467	101,233	310,767	330,666	532,233	216,900	96,867	625,833	2,748,967	June

Coke, Asphalt, Miscellaneous Products

	Coke Output (Tons)	Coke Stocks (Tons)	Asphalt Output (Tons)	Asphalt Stocks (Tons)	Miscel. Products Output (Bbls.)	Miscel. Products Stocks (Bbls.)	Unfin. Oil Output (Bbls.)	Unfin. Oil Stocks (Bbls.)	Losses (Bbls.)	
January, 1927	92,914	287,394	191,180	215,337	511,000	1,189,000	2,473,000	39,287,000	2,367,000	January, 1927
February	88,102	294,682	172,685	234,450	546,000	1,282,000	2,729,000	38,986,000	2,091,000	February
March	98,163	325,521	222,309	235,251	525,000	1,356,000	2,412,000	39,392,000	2,369,000	March
April	88,404	318,529	273,767	219,502	561,000	1,410,000	1,978,000	38,095,000	2,237,000	April
May	87,900	329,400	319,000	222,500	599,000	1,368,000	1,809,000	37,760,000	2,599,000	May
June	95,300	293,100	347,100	232,400	677,000	1,180,000	2,283,000	38,192,000	2,487,000	June
July	90,400	305,800	334,700	214,100	747,000	928,000	2,490,000	39,647,000	2,516,000	July
August	94,800	303,600	339,500	192,200	743,000	879,000	1,955,000	38,711,000	2,598,000	August
September	97,500	313,500	333,100	176,300	634,000	863,000	1,811,000	36,962,000	2,453,000	September
October	101,600	331,300	332,600	189,400	663,000	960,000	1,977,000	35,874,000	2,405,000	October
November	102,300	349,200	290,000	196,200	606,000	1,120,000	2,121,000	35,209,000	2,145,000	November
December	107,800	345,100	262,600	220,800	593,000	1,221,000	2,435,000	35,314,000	2,062,000	December
1927 Total	1,145,183	.....	3,418,541	.....	7,405,000	.....	26,473,000	.....	28,329,000	1927 Total
January, 1928	103,000	330,400	198,900	209,300	613,000	1,176,000	2,297,000	35,843,000	2,128,000	January, 1928
February	100,000	337,000	208,500	230,300	635,000	1,297,000	2,198,000	36,030,000	1,969,000	February
March	107,200	352,400	270,000	268,700	661,000	1,527,000	2,247,000	35,601,000	2,258,000	March
April	109,400	342,100	273,900	273,700	656,000	1,601,000	2,475,000	36,463,000	2,223,000	April
May	118,400	348,300	330,700	262,200	879,000	1,392,000	2,792,000	37,073,000	2,398,000	May
June	118,100	343,700	331,600	343,700	892,000	1,130,000	2,307,000	36,999,000	2,547,000	June

Lubricating Oils

Daily average domestic production of lubricating oils increased only 0.59 per cent in June over May output. Shipments of lubricants from refineries were 9.7 per cent larger than in May. Both domestic and export demand was larger.

Production was larger in June than in May in five districts but smaller in the Indiana-Illinois, and Louisiana-Arkansas districts. Shipments were considerably larger from the East Coast and Texas plants, probably due to exports, which were the largest on record.

Stocks of lubricants decreased 228,000 barrels in June, drafts having

Paraffin Wax Supply and Demand — Pounds

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	54,114,000	460,000	29,228,000	17,842,000	192,835,000
February	47,363,000	2,048,000	23,623,000	20,171,000	198,452,000
March	53,644,000	910,000	28,205,000	23,461,000	201,340,000
April	48,917,000	1,505,000	25,421,000	15,322,000	211,019,000
May	46,267,000	729,000	25,228,000	25,458,000	207,329,000
June	44,938,000	400,000	24,200,000	29,659,000	198,808,000
Total Six Months	295,243,000	6,052,000	155,905,000	131,903,000	198,808,000
July	47,979,000	2,789,000	25,970,000	32,105,000	191,501,000
August	41,576,000	2,656,000	34,229,000	20,859,000	180,645,000
September	47,888,000	3,040,000	31,780,000	29,621,000	170,172,000
October	49,476,000	887,000	28,342,000	21,826,000	170,367,000
November	48,146,000	3,132,000	32,541,000	17,404,000	171,700,000
December	54,039,000	1,906,000	30,569,000	29,862,000	150,638,000
1927 Total	584,347,000	20,462,000	339,336,000	283,590,000	.....
January, 1928	55,320,000	1,117,000	39,712,000	16,878,000	150,485,000
February	49,724,000	1,337,000	38,036,000	13,477,000	150,033,000
March	50,207,000	1,767,000	40,147,000	41,060,000	120,800,000
April	57,548,000	2,996,000	34,122,000	37,212,000	110,010,000
May	51,072,000	1,855,000	34,826,000	24,472,000	103,639,000
June	50,792,000	1,715,000	33,594,000	34,848,000	87,704,000
Total Six Months	314,501,000	10,787,000	220,437,000	167,815,000	87,704,000

Gas and Fuel Situation by Districts — Barrels

Districts	June Daily Avg. Output	May Daily Avg. Output	June Change %	June Daily Avg. Shipments	May Daily Avg. Shipments	June Change %	Stocks June 1928	Stocks May 1928	Stocks June 1927	Districts
East Coast	274,400	254,451	+ 7.84	248,433	245,000	+ 1.40	9,729,000	8,950,000	7,430,000	East Coast
Appalachian	18,367	18,871	— 2.67	18,033	16,322	+10.48	1,029,000	1,019,000	866,000	Appalachian
Ind., Ill., etc.	94,200	89,355	+ 5.42	78,800	67,935	+15.99	2,495,000	2,033,000	1,273,000	Ind., Ill., etc.
Okla., Kans., etc.	105,033	105,290	— 0.24	90,300	83,968	+ 7.54	5,672,000	5,230,000	4,667,000	Okla., Kans. etc.
Texas	218,933	221,097	— 0.97	173,900	186,677	— 6.84	10,474,000	9,123,000	8,192,000	Texas
La. & Ark.	85,000	97,032	—12.40	86,067	81,613	+ 5.46	5,425,000	5,457,000	3,581,000	La. & Ark.
Rocky Mount	18,600	21,903	—15.08	14,733	17,193	—14.31	1,191,000	1,075,000	581,000	Rocky Mount
California	370,967	341,032	+ 8.78	.....	.....	.....	.....	.....	.....	California
U. S. Total	1,185,500	1,149,032	+ 3.17	1,081,233	1,039,742	3.99	36,015,000	32,887,000	26,590,000	U. S. Total
Texas Gulf Coast	154,533	160,258	— 3.57	116,400	132,710	—12.29	8,513,000	7,369,000	6,756,000	Texas Gulf Coast
La. Gulf Coast	46,833	54,322	—13.79	45,000	44,677	— 0.72	4,652,000	4,597,000	2,860,000	La. Gulf Coast

Kerosene Situation by Districts — Barrels

Districts	June Daily Avg. Output	May Daily Avg. Output	June Change %	June Daily Avg. Shipments	May Daily Avg. Shipments	June Change %	Stocks June 1928	Stocks May 1928	Stocks June 1927	Districts
East Coast	21,467	24,935	—13.91	24,500	21,064	+16.31	1,526,000	1,617,000	1,589,000	East Coast
Appalachian	11,267	10,193	+10.53	9,600	11,000	—12.72	294,000	244,000	300,000	Appalachian
Ind., Ill., etc.	19,167	19,161	+ 0.03	13,733	20,387	—32.64	936,000	773,000	721,000	Ind., Ill., etc.
Okla., Kans., etc.	28,067	29,742	— 5.63	24,133	29,774	—18.94	603,000	485,000	533,000	Okla., Kans. etc.
Texas	37,733	36,903	+ 2.25	29,300	49,613	—40.94	1,495,000	1,242,000	1,667,000	Texas
La. & Ark.	15,533	16,580	— 6.31	14,600	7,935	+83.99	1,553,000	1,495,000	1,511,000	La. & Ark.
Rocky Mount	5,632	5,839	— 3.54	4,300	7,387	—41.79	287,000	247,000	318,000	Rocky Mount
California	21,767	25,774	—15.54	13,700	28,290	—51.57	1,676,000	1,434,000	1,928,000	California
U. S. Total	161,633	169,127	— 4.43	133,866	175,450	—23.70	8,370,000	7,537,000	8,567,000	U. S. Total
Texas Gulf Coast	30,932	29,871	+ 3.55	22,000	42,484	—48.21	1,430,000	1,162,000	1,244,000	Texas Gulf Coast
La. Gulf Coast	14,600	14,710	— 0.75	12,600	6,516	+93.37	1,528,000	1,468,000	1,471,000	La. Gulf Coast

Gasoline Situation by Districts — Barrels

Districts	June Daily Avg. Output	May Daily Avg. Output	June Change %	June Daily Avg. Shipments	May Daily Avg. Shipments	June Change %	Stocks June 1928	Stocks May 1928	Stocks June 1927	Districts
East Coast	146,167	139,322	+ 4.91	168,133	156,387	+ 7.51	5,653,000	6,312,000	8,355,000	East Coast
Appalachian	45,533	43,839	+ 3.86	46,333	48,129	— 3.73	1,133,000	1,157,000	932,000	Appalachian
Ind., Ill., etc.	152,667	146,710	+ 4.06	164,367	162,097	+ 1.40	4,679,000	5,030,000	4,859,000	Ind., Ill., etc.
Okla., Kans., etc.	166,433	164,419	+ 1.22	182,500	188,839	— 3.36	2,959,000	3,441,000	3,664,000	Okla., Kans. etc.
Texas	212,000	208,129	+ 1.86	257,967	206,903	+24.68	4,567,000	5,946,000	6,188,000	Texas
La. & Ark.	68,367	73,839	— 7.41	74,033	82,613	—10.38	1,248,000	1,418,000	2,747,000	La. & Ark.
Rocky Mount	45,700	48,903	— 6.55	50,533	53,451	— 5.46	1,913,000	2,058,000	4,495,000	Rocky Mount
California	185,633	169,193	+ 9.72	176,734	188,645	— 6.31	12,241,000	11,974,000	12,528,000	California
U. S. Total	1,022,500	994,354	+ 2.83	1,120,600	1,087,064	+ 3.09	34,393,000	37,336,000	43,768,000	U. S. Total
Texas Gulf Coast	162,533	160,064	+ 1.54	206,967	156,742	+32.04	3,883,000	5,216,000	5,362,000	Texas Gulf Coast
La. Gulf Coast	51,033	54,774	— 6.83	55,934	63,032	—11.26	1,180,000	1,327,000	2,633,000	La. Gulf Coast

Lubricants Situation by Districts — Barrels

Districts	June Daily Avg. Output	May Daily Avg. Output	June Change %	June Daily Avg. Shipments	May Daily Avg. Shipments	June Change %	Stocks June 1928	Stocks May 1928	Stocks June 1927	Districts
East Coast	30,367	29,033	+ 4.59	36,233	29,484	+22.89	2,676,000	2,852,000	2,543,000	East Coast
Appalachian	15,333	14,742	+ 4.01	13,933	14,516	— 4.01	1,135,000	1,093,000	986,000	Appalachian
Ind., Ill., etc.	12,300	12,355	— 0.44	13,133	13,194	— 0.46	790,000	815,000	679,000	Ind., Ill., etc.
Okla., Kans., etc.	6,933	7,742	—10.45	7,767	7,710	+ 0.74	519,000	544,000	445,000	Okla., Kans. etc.
Texas	25,633	25,484	+ 0.58	27,500	23,355	+17.75	1,672,000	1,728,000	1,904,000	Texas
La. & Ark.	1,400	2,193	—36.16	1,200	1,871	—35.86	131,000	125,000	110,000	La. & Ark.
Rocky Mount	1,834	1,742	+ 5.28	1,567	1,710	— 8.36	139,000	131,000	127,000	Rocky Mount
California	6,500	6,419	+ 1.26	6,567	6,516	+ 0.78	770,000	772,000	834,000	California
U. S. Total	100,300	99,710	+ 0.59	107,900	98,356	+ 9.70	7,832,000	8,060,000	7,628,000	U. S. Total
Texas Gulf Coast	24,367	24,419	— 0.21	26,300	22,451	+17.14	1,589,000	1,647,000	1,864,000	Texas Gulf Coast
La. Gulf Coast	1,333	2,129	—37.38	1,233	1,806	—46.47	126,000	123,000	110,000	La. Gulf Coast

been made in all but the Appalachian, Louisiana-Arkansas, and Rocky Mountain districts. Stocks of lubricants June 30, 1928, were 204,000 barrels larger than stocks June 30, 1927.

The lubricating oil situation in the first half of 1928 compares with that in the first half of 1927 as follows:

1. Domestic production was 1,937,000 barrels, or 12.5 per cent more.

2. Imports were 5000 barrels last year and none this year.

3. Total new supply was 1,937,000 barrels, or 12.5 per cent more.

4. Domestic demand was 723,000 barrels, or 6.6 per cent more.

5. Exports were 1,066,000 barrels, or 22.4 per cent more.

6. Total demand was 1,789,000 barrels, or 11.4 per cent more.

Paraffin Wax

Total domestic production, imports and exports of paraffin was in June below the May figures, but domestic demand in June increased more than 10,000,000 pounds. Stocks were lowered 15,935,000 pounds to 87,704,000 pounds, the smallest quantity since the Bureau of mines began to compile wax statistics in July 1917. The closest approach to the June 30 low state of wax stocks since 1917 was Jan. 31, 1925, when stocks amounted to 89,006,000 pounds.

The paraffin wax situation in the first half of 1928 compares with that in the first half of 1927 as follows:

1. Domestic production was 19,258,000 pounds, or 6.5 per cent more.

2. Imports were 4,735,000 pounds, or 78.2 per cent more.

3. Total new supply was 23,993,000 pounds or 8 per cent more.

4. Exports were 64,532,000 pounds or, 41.4 per cent more.

5. Domestic demand was 35,912,000 pounds, or 27.2 per cent more.

6. Total demand was 100,444,000 pounds, or 34.9 per cent more.

7. Stocks were reduced 111,104,000 pounds, or 55.9 per cent from June 30, 1927, to June 30, 1928.

Gas and Fuel Oils

Daily average gas and fuel oil production was 3.17 per cent larger in June than in May. Production was speeded up in the East Coast, Indiana-Illinois and California districts, but curtailed elsewhere. Shipments were larger from all but the Texas and Rocky Mountain districts east of California. Figures on California shipments are not available.

Lubricating Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	2,570,000	1,000	864,000	1,496,000	7,867,000
February	2,345,000	.....	620,000	1,231,000	8,361,000
March	2,754,000	1,000	895,000	2,334,000	8,035,000
April	2,615,000	1,000	763,000	1,712,000	8,176,000
May	2,625,000	1,000	863,000	1,928,000	8,011,000
June	2,571,000	1,000	758,000	2,197,000	7,628,000
Total Six Months	15,480,000	5,000	4,763,000	10,898,000	7,628,000
July	2,672,000	.....	993,000	1,811,000	7,496,000
August	2,752,000	1,000	754,000	2,004,000	7,491,000
September	2,782,000	.....	861,000	1,965,000	7,447,000
October	2,757,000	1,000	839,000	1,782,000	7,584,000
November	2,477,000	.....	798,000	1,739,000	7,524,000
December	2,801,000	.....	802,000	1,663,000	7,860,000
1927 Total	31,721,000	7,000	9,810,000	21,634,000	.....
January, 1928	2,658,000	.....	934,000	1,606,000	7,978,000
February	2,728,000	.....	841,000	1,533,000	8,332,000
March	2,905,000	.....	837,000	1,988,000	8,412,000
April	3,026,000	.....	1,059,000	2,362,000	8,018,000
May	3,091,000	.....	1,063,000	1,989,000	8,060,000
June	3,009,000	.....	1,095,000	2,143,000	7,832,000
Total Six Months	17,417,000	.....	5,829,000	11,621,000	7,832,000

Gas and Fuel Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	32,936,000	660,000	3,732,000	.....	*23,195,000
February	30,185,000	1,053,000	3,812,000	.....	*22,099,000
March	32,377,000	525,000	3,657,000	.....	*22,561,000
April	31,856,000	805,000	3,325,000	.....	*23,732,000
May	33,499,000	826,000	4,544,000	.....	*26,059,000
June	31,691,000	851,000	4,278,000	.....	*26,590,000
Total Six Months	192,544,000	4,720,000	23,348,000	.....	*26,590,000
July	33,693,000	849,000	4,047,000	.....	*28,890,000
August	34,098,000	391,000	4,639,000	.....	*30,346,000
September	32,339,000	341,000	3,258,000	.....	*31,631,000
October	34,045,000	667,000	4,206,000	.....	*33,191,000
November	32,594,000	704,000	4,013,000	.....	*33,637,000
December	33,029,000	451,000	3,828,000	.....	*31,982,000
1927 Total	392,342,000	8,123,000	47,339,000	.....	.....
January, 1928	32,271,000	553,000	4,175,000	.....	*29,623,000
February	30,944,000	666,000	3,420,000	.....	*29,011,000
March	34,071,000	848,000	3,969,000	.....	*29,170,000
April	33,857,000	1,176,000	4,211,000	.....	*29,499,000
May	35,620,000	323,000	3,612,000	.....	*32,887,000
June	35,565,000	468,000	4,238,000	.....	*36,015,000
Total Six Months	202,328,000	4,034,000	23,625,000	.....	*36,015,000

*These stocks for east of California only.

Kerosene Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1927	5,113,000	.....	1,616,000	3,882,000	8,190,000
February	4,453,000	1,000	1,399,000	2,590,000	8,655,000
March	4,802,000	3,000	1,351,000	3,356,000	8,753,000
April	4,608,000	1,000	1,861,000	2,776,000	8,725,000
May	4,663,000	1,000	1,633,000	3,188,000	8,568,000
June	4,308,000	2,000	1,616,000	2,695,000	8,567,000
Total Six Months	27,947,000	8,000	9,476,000	18,487,000	8,567,000
July	4,484,000	.....	1,376,000	2,637,000	9,038,000
August	4,420,000	4,000	1,700,000	3,389,000	8,373,000
September	4,686,000	.....	1,659,000	3,280,000	8,120,000
October	4,884,000	1,000	2,211,000	3,469,000	7,325,000
November	4,824,000	27,000	1,821,000	2,514,000	7,841,000
December	4,869,000	15,000	1,237,000	3,819,000	7,669,000
1927 Total	56,114,000	55,000	19,480,000	37,595,000	.....
January, 1928	5,047,000	46,000	2,350,000	2,742,000	7,670,000
February	4,783,000	11,000	1,551,000	3,221,000	7,692,000
March	4,717,000	6,000	1,852,000	2,737,000	7,826,000
April	5,033,000	20,000	1,912,000	3,234,000	7,733,000
May	5,243,000	1,000	2,057,000	3,383,000	7,537,000
June	4,849,000	24,000	1,655,000	2,385,000	8,370,000
Total Six Months	29,672,000	108,000	11,377,000	17,702,000	8,370,000

However, stocks of fuel oil rose 3,128,000 barrels east of California, the only district decline being one of 32,000 barrels in Louisiana-Arkansas. Stocks June 30, 1928, east of California were 36,015,000 barrels, compared with 26,590,000 barrels June 30, 1927.

Production of fuel oil in the first half of 1928 in the entire country was 9,784,000 barrels, or 5.1 per cent more than in the first half of 1927.

Imports were 686,000 barrels, or 14.5 per cent smaller this year.

Exports were 277,000 barrels or 1.2 per cent larger.

Figures on domestic consumption are not available because of the lumping of refinery produced fuel oil and fuel grade crude oil in California.

What Price Comfort Stations For Tourist Routes?

THIS question of what price comfort stations for gasoline stations is of wide general interest, among both operators and patrons of stations, judging from the comment this publication has received since publishing the letter from A. W. Miller. *See Page 29, Aug. 1st issue.*

HAS any station owner or operator had experience with pay toilets at his station? If so, will he help along this discussion by giving his experience? Or if he has comment on this subject generally the editors shall be glad for that.

Here is a letter from E. H. Frey, who runs a service station under his own name in York, Pa.

"On page 29 of the Aug. 1 issue of your paper you have a very fine article from a Mr. Miller, and from both sides of the question the matter of comfort stations is getting to be a problem.

"Here in the east where the country is heavily populated and every person goes riding in an evening or over the week end, the comfort stations are taxed to over-flowing with people who never purchase a cent's worth of goods, but who want all the little niceties they enjoy at home.

"Mr. Miller hits it right from the standpoint of the tourist and I want to back him up from the standpoint of the station operator.

"We have people who stop here every time they go through from Baltimore. On several occasions I have asked them if they needed gas or oil. They acted as though they were being insulted and some actually told me to go to—, as they did not use my kind of gas, would not use it in their machines. They told me that the only reason they stop at all is to use the toilets. There ought to be some way of either getting their business or keeping them out. Pay toilets might be the very thing.

"One reason why you can never get the business of the traveling public is, that they fill up when they leave their home town and only go as far as they can and get back without spending any more. The home service station does not have them use his toilet as they have just left their homes, but all the places along the road are liable to have them for visitors and get nothing from them; yet the toilets are a source of expense as they must be kept clean for customers, and nearly all have soap, towels, etc. in them.

"There are a great many folks hiking, too, who never purchase anything, yet they all want in. They generally mess things up something awful. Yet they get smart when you tell them the rooms are for customers only. There is a great deal to be said about the Comfort Station and you can get some of your special writers on the job and your paper will stir up a lot of good reading stuff for station men."

Here is also a second letter from the same Miller in which he makes some further suggestions on the same subject.

"Here's a few questions, just from me to you.

"Why don't makers of bathroom equipment advertise in your publication?

"Why doesn't some maker develop a complete toilet-lavatory equipment (with septic tank and water flush) for installation in service stations and sell it as a unit, installed (possibly through tie-up with local plumber)? Crane Co., or equal, please note.

"Why doesn't some maker install one such equipment complete on some main stem, on a *pay* toilet basis? It wouldn't cost him much; it would be dandy advertising; it would give him a chance to see if the psychology of the *pay* toilet wouldn't draw big in a field where free accommodation is taken for granted and not highly esteemed because of generally poor quality.

"What can be done to solve the problem of getting gas for night drivers? It is no stunt to burn up 4 gallons per hour with fast modern cars on long night runs. That means dry in less than 5 hours and all-night gas stations are hard to find. Larger tanks on cars is one suggestion.

"Why in hell should it be necessary to raise the hood, pool out a hot bayonet gauge and drip oil on engine and fenders, wipe off, gauge and return, just to find out if oil is needed? If a dashboard gas gauge is practical, why not an oil level gauge?

"Can owners of cars with 1-shot systems be sold inspection service on the grease lift to determine if all leads are functioning as determined by showings of oil at the various bearings? I think everybody doubts these systems; I doubt mine.

"P.S. I regretfully changed over to Socony yesterday because they are advertising 'Clean Rest Rooms' widely on billboards. I tried them out twice and they were right, both times. Never expected to use their product, which I don't fancy, but the pressure was powerful. I'm beginning to believe in my own idea."

New Patents

July 31, 1928

REFINING

Treating Hydrocarbon Oils—William S. Hadaway, Jr., New Rochelle, N. Y., assignor to The Texas Company, New York, N. Y. Filed Sept. 15, 1923. No. 1,678,728.

Circulating Dephlegmator—Daniel Pyzel, Oakland, Calif., assignor to Simplex Refining Company, San Francisco, Calif. Filed Nov. 6, 1919. No. 1,678,823.

Process for Refining Petroleum Oils with Doctor Solution—Robert L. Hallett, Brooklyn, N. Y., assignor to National Lead Company, New York, N. Y. Filed Feb. 17, 1926. No. 1,678,984.

Polymerization and Purification of Hydrocarbons—Stuart P. Miller and Joseph Bennett Hill, Philadelphia, Pa., assignors to The Barrett Company. Filed Aug. 5, 1926. No. 1,679,093.

Process of Cracking Petroleum Oil—Gustav Egloff, Chicago, Ill. Filed Oct. 22, 1923. No. 1,679,208.

PRODUCTION

Swivel Rope Socket—Albert H. Neilson, Tulsa, Okla. Filed June 27, 1927. No. 1,678,706.

Polished Rod Clamp—Charles E. Gallman, Tulsa, Okla., assignor to Oil Well Supply Company, Pittsburgh, Pa. Filed May 11, 1926. No. 1,679,028.

Crown Block—William S. Evans, Palisades Park, N. J., assignor to Lucey Manufacturing Corporation of Tennessee, Chattanooga, Tenn. Filed Aug. 11, 1927. No. 1,679,327.

MISCELLANEOUS

Combined Vacuum and Pressure Relief Valve for Receiving and Storage Tanks—Andrew J. McEwan, Tulsa, Okla. Filed Sept. 30, 1926. No. 1,678,700.

Method of Distilling Oil Shale and Providing a Raw Material Suitable for the Manufacture of Hydraulic Cement—Oskar Tetens, Oerlinghausen-Lippe, Germany, assignor to the Firm Record Cement-Industrie G. m. b. H., Frankfort-on-the-Main, Germany. Filed Sept. 19, 1924. No. 1,678,751.

August 7, 1928

REFINING

Insecticide and Fungicide—Francis M. Rogers and Claude P. McNeil, Whiting, Ind., assignors to Standard Oil Company, Whiting, Ind. Filed May 3, 1926. No. 1,679,919.

PRODUCTION

Pump for Oil Wells—David R. Tripplehorn, Fort Worth, Tex. Filed July 25, 1927. No. 1,679,552.

Pump for Wells—John Penrod and Robert D. Thompson, Okmulgee, Okla. Filed Mar. 23, 1926. No. 1,679,625.

Pull-rod Connection—Peter E. Seckler, Tulsa, Okla. Filed Apr. 2, 1927. No. 1,679,686.

Rotary Well-Drilling Machine—Julius H. Holmgreen and Richard J. Holmgreen, San Antonio, Tex., assignors to Alamo Iron Works, San Antonio, Tex. Filed June 23, 1923. No. 1,679,825.

Blow-Out Preventer—Lester M. Crans, Venice, Calif. Filed Jan. 18, 1927. No. 1,679,962.

Derrick Structure for Oil, Gas, and Artesian Wells—Gordon Battelle and Harry M. Runkle, Columbus, Ohio, and William B. Tobin, Los Angeles, Calif., assignors to The International Derrick & Equipment Company, Columbus, Ohio. Filed Oct. 15, 1921. No. 1,680,198.

NATURAL GAS

Process for Purifying Gases—Walter H. Fulweiler, Wallingford, Pa., assignor to The U. G. I. Contracting Company, Philadelphia, Pa. Filed Dec. 4, 1923. No. 1,679,858.

MISCELLANEOUS

Process and Means for Extracting Petroleum—John L. Rich, Ottawa, Kans. Filed Jan. 25, 1926. No. 1,679,683.

Manhole Cover for Oil Tanks—Adolph Edward Nelson, Chelsea, Okla. Filed Mar. 15, 1926. No. 1,680,060.

Consider Standards For All Belting

NEW YORK, Aug. 10.—Because of the success of the American Petroleum Institute standardization program in establishing standards for belting used in the oil fields, the American Society of Mechanical Engineers has asked the American Engineering Standards Committee to authorize establishment of definite standards for leather belting generally, as a guide to industrial purchasers.

This proposal is being considered by the executive committee of the Standards Committee. If approved, the work will be undertaken covering these points; 1, quality (standard material specification), 2 capacity (horsepower rating), 3 weight (dimensions, thickness and weight) and 4, care and maintenance of belting.

Results of research work conducted by the American Petroleum Institute will be studied.

"It is believed that the oil industry's success with standardization of belting could be duplicated in other fields. A saving to all industries on the basis of the 25 per cent estimated for the oil industry would mean that the purchasers of leather belting in the United States would be saved over $7,000,000 annually," said the American Engineering Standards Committee.

A New Airplane Service

KANSAS City, Aug. 10.—Lieut. Elmer C. Rodenbaugh, formerly of the Naval Flying Corps., has been engaged by the Butler Manufacturing Co. to operate the airplane it uses to give speedy service in connection with its steel hangars and airports. He will also be able to give advice on different sizes and kinds of steel hangars suitable for particular fields, since, in his flying experience, he has visited most of the fields in the country.

BLOOMINGTON, Ill.—C. U. Williams, president, and Walter W. Williams, vice president of the Williams Oil-O-Matic Heating Corp., Bloomington, Ill., have bought the controlling interest in the Mechanical Devices Corp. of Aurora, Ill., including its patents. The plant has been moved to the Williams concern's factory. It manufactures a direct drive rotary pump used in the Williams Oil-O-Matic oil burners, which also is sold to a number of other oil burner manufacturers, and this outside business will be continued.

Carriers of the government air mail between New York and Dallas have at least one pilot in the air every hour of the 24.

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Color your anti-knock or high test gasoline an attractive shade by which the public will recognize and remember your good product.

DYKEM GASOLINE COLORS

Made especially for gasoline; simple, safe, economical

BLUE GREEN PURPLE RED ORANGE

Write for price and sample of shade you prefer.

DYESTUFFS & CHEMICALS, INCORPORATED

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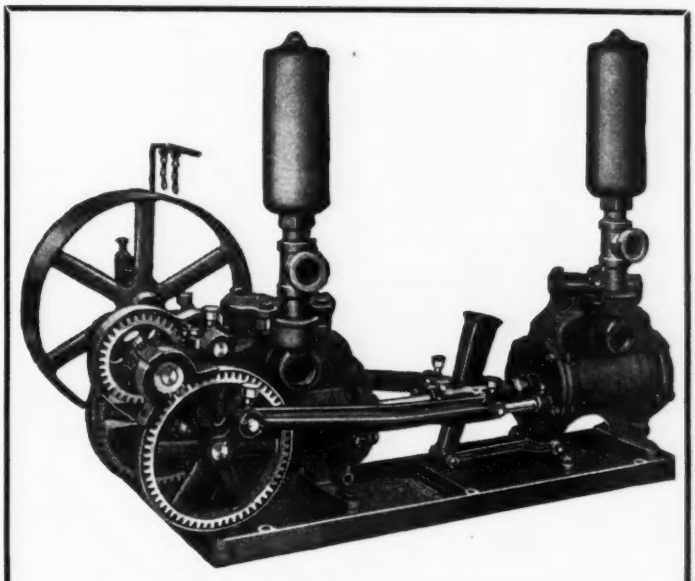
MODEL 141

Shown here is a double-acting plunger pump to be operated with 1,800 speed electric motor. Back geared 9 to 1. Speed is approximately 40 R.P.M. of large gear shaft.

WRITE for FACTS

concerning this popular model and other Dempster Pumps—all backed by Dempster's 50-year reputation for building dependable equipment.

Distributors: Write for prices, sales plan and details about good territories still open.



A Pump for Every Need---

Regardless of what your pumping job may be there is a Dempster Oil Pump that will assure you satisfactory service at low cost!

The Model 141 shown above gives you all the advantages of two pumps opposing each other on one solid base—the ideal pump where two oils are handled or where double capacity is required. Has Tobin Bronze piston rods, machine cut gears, specially treated packing rings and interchangeable parts.

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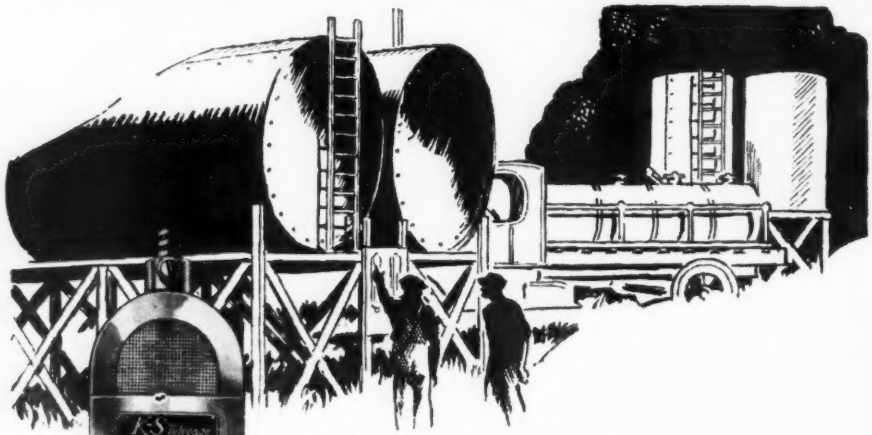
DEMPSTER OIL PUMPS

THE HYDROSTATIC DISTANT READING GAUGE



Why Risk Life with a Measuring Stick?

REFINERY and distributing managers can no longer send their men to the top of the tanks with an easy mind, since the K-S Telegage has made that practice obsolete.

The hazards to life, property, and efficiency which went with the use of measuring sticks and tape, do not bother the modern manager. Today he guards his storage, at a safe and practical distance, with this indispensable precision instrument.

At all times, with ease and accuracy, the K-S Telegage tells at a glance the depth of liquids in storage tanks. Placed at any distance from the tank and either above or below it as you may desire, this precision instrument guards your petroleum products against checking errors, production losses and delivery "leaks." The reliability of the Telegage is assured by the fact that it is a product of the world's largest maker of distant reading gauges.

Our engineering department will be pleased to discuss any industrial gauge problem, if you will write giving a full description of your requirements. Give the Baume or Specific Gravity of each liquid to be measured, and the distance from tank to desired location of gauge. Descriptive folder sent on request.

Approved by Underwriter's Laboratories

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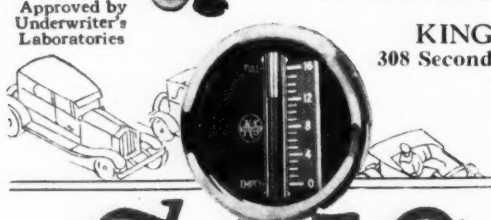

The K-S Telegage

BE CERTAIN WITH THE *K—S TELEGAGE*

Standard factory equipment on three-fourths of all cars selling for $700 or more.

Rader is Manager Of Manhattan Oil

JOHN W. RADER

KANSAS CITY—John W. Rader who for the past several years has been comptroller of the Manhattan Oil Co. of Delaware has recently been made manager of the Manhattan of Kansas, which operates in the Missouri and Kansas territory with headquarters at 800 Security building, Kansas City, Missouri.

Picketers Go On Strike For Higher Wages

CHICAGO, Aug. 11.—Following the successful example of the teamsters, truck drivers, etc., of Chicago who have been able to enlist the service station attendants of the city into their ranks, the teamster's union of Belleville, Ill., tried the same thing a few days ago with indifferent success.

Banner bearing picketers were put on duty to picket the oil stations of Belleville, in an effort to force members of the Gasoline Station Operators' association to come into the labor union. The station operators would not come in and the picketers were drawing $6 a day for their work from the teamsters' union.

The service station men were faring reasonably well and so were the picketers at $6 a day but the teamsters decided to cut the pay of the picketers to $5.50 a day, whereupon they developed group consciousness, unrest, resentment and a few other emotions and went on a strike. The picketing has ceased.

"What Can We Do About the Q.D.A. Plan?" Wisconsin Jobbers Ask

MADISON, Wis., Aug. 11

DON MONTGOMERY of the Wisconsin Department of Markets reports a favorable response to his open letter of July 26 to the Independent oil men of his state urging them to take advantage of present market conditions to abandon the use of the quantity discount agreement, inaugurated in this territory by Standard Oil Co. of Indiana.

His letter was published in part on page 111 of the Aug. 1 issue of NATIONAL PETROLEUM NEWS. The Associated Press and the United Press also gave it publicity and it was published in a majority of Wisconsin newspapers. Within a week Mr. Montgomery received about 24 replies from oil men expressing themselves favorably to his idea, but most of them declined to take any action unless the major competitors take the lead.

Officials of six companies say they already have ceased to observe the Q.D.A. or are about to discontinue its use. Mr. Montgomery says he will not call a meeting of oil men to further the movement, preferring that they take whatever action they may choose to take individually and of their own accord. However, he has broadcast to them copies of some of the replies received.

Names, dates and addresses have been stricken from the letters for obvious reasons, but some of the expressions of the oil men of Wisconsin with regard to the famous Q.D.A. are as follows:

* * *

"The writer has long maintained that business distress is chargeable chiefly to ignorance of business principles on the part of many who venture in without preparation and the consequent failure to apply those principles to the business in hand. I am fast coming to the conviction, however, that so-called captains of industry (the one million dollar executives) can evidence more asininity in one minute than the ignorant business novice in a day.

"The Q.D.A. is a most striking example of such asininity. Certainly the oil industry itself has not benefited by this piece of stupidity nor has the general public profited; rather have both been burdened unnecessarily. The only benefit accruing from the practice has been to large buyers of gasoline, who, in most instances, have failed to pass the advantage along to the public. The plan is obviously to make the average buyer pay a pump price for his gasoline sufficiently large to offset the losses suffered (admittedly) on quantity sales.

"That is one fact unfavorable to the public's interest. Another is (and I believe it to be the chief one) that the wide spread between the quantity price and the pump price has attracted into the field innumerable excessive retail marketers whose time and investment, principally in idleness, must be paid for by the public, a tribute enforced often by mutual price agreement necessarily, and this in spite of the fact that the public did not invite us in. . . .

"Personally, we have no great material interest in the matter. We have consistently refused to participate in the practice of rebating, as well as all of the other pernicious practices the plan makes necessary, seemingly, for self-preservation. But as advocates of morality and honor in business as potent factors in public welfare we would like greatly to see the Q.D.A. discontinued; voluntarily by the trade preferably, per force if necessary."

* * *

"It has always been our contention that the quantity rebate of filling stations was a very unfair practice. There is no justification in the fact that because a man buys 200 gallons a month in quantities to fill his car or truck, the same as any other buyer does to get a rebate on his purchases, and the individual small consumer should be forced to pay for like service 2 cents per gallon more than the other man, and I believe that the Marketing Board has missed an opportunity of its office by not enforcing one price for like service to every one that drove to a filling station."

* * *

"We would be very glad to see the present Q.D.A. system abolished and we wish to assure you that you will have our support in any program looking toward the abolishing of the present rebate system or increasing of our margins in so far as we are able to give it, limited as we are by the relatively small figure which we cut in this market. We feel that the best course for us to follow is to wait until the stronger companies here take the lead, when it will be our aim to fall promptly in line."

* * *

"Regarding the rebate system, this has always been a thorn in our side, so to speak, but when competitive companies adopted the plan, what is there for the smaller company to do but adopt it also? As to further rebating, we will of course have to leave the decision to the S. O. company: of course, this quantity discount will probably not affect us, as we do not believe that we will have any one customer taking such an amount."

* * *

"We believe it unfair and rank discrimination so far as it provides discounts for those who are in the best positions to pay the 'long price'. . . . . If a fair margin of profit could be established and the spread between tank car cost and tank wagon deliveries held within reason, it would eliminate secret rebates and the general Q.D.A. could also be done away with."

* * *

"We have never been in favor of the Quantity Discount Agreement and we are not in favor of it now. We are in the position of a great many other distributors however and are compelled to do what our larger competitors do. If we did not offer our customers the present Q.D.A. our business would be nil. The sooner it is discontinued, the better we will like it."

* * *

In reply to letters from jobbers, who profess to have abandoned the use of Q. D. A., Mr. Montgomery wrote a letter telling them of the advantages of their position. Excerpts from his letter follow:

"Since you are taking this move, we want to point out to you that when you have eliminated all rebates and are selling only at the tank wagon and service station prices, you will have a certain competitive advantage under the laws of the state which may be of importance to you now, or at some later time when margins are wider. The anti-discrimination law, sec. 133.17, Wisconsin statutes, prohibits discriminations between places and persons made for the purpose of injuring or destroying a competitor. Whether a court of law would hold that this statute forbids the Q.D.A. rebates is doubtful; but we do feel certain that it will work to your protection under your present situation, as follows:

"If you, selling only at your regular posted price, decide to lower that posted price to all customers in your city, then a major company, which pays rebates off of the posted price, can not lower its regular price in

(*Continued on Page* 110)

for bigger, better business

OPALINE

REG. U.S. PAT. OFF

..the extra service Motor Oil

YOU give a motorist extra service when you sell him the correct grade of Opaline—because Opaline does an *extra* service in his engine! It is more than a motor oil of the right *quality* for lubrication. It is a motor oil that a motorist buys in the right *grade* for piston seal to prevent the power from blowing by. There are several grades of Opaline to fit the different degrees of wear in a car's engine both before and after pistons are refitted or new rings installed. When a motorist tells an Authorized Opaline Dealer his mileage, the Sinclair Recommendation Index tells which grade is needed to seal the pistons and prevent the power from blowing by!

That's the *extra* service in Opaline Motor Oil. That's the reason it builds bigger, better business. The right grade of motor oil is just as important as the right quality. And the Authorized Opaline Dealer sells BOTH! May we tell you the details?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

45 NASSAU STREET, NEW YORK

Atlanta Boston Chicago Houston Kansas City

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Refinery - Tank Wagon Markets

National Petroleum News

Light Oils in Big Demand by Jobbers; Exporters Again Active

Staff Special
TULSA, Aug. 11

THE Mid-Continent gasoline market continued to move upward during the week of Aug. 6-11. This was the result of continued active demand for all grades from domestic trade, and a renewal of export buying in north Texas.

Purchases of 1,000,000 gallons of 64-66, 375 e. p. gasoline, and 250,000 gallons of U. S. Motor were reported in north Texas. Exporters were inquiring for more goods at the close of the week.

Prices on all grades of refined gasolines advanced from 0.125 to 0.375 cent a gallon, with the weighted average for 58-60 U. S. Motor in Oklahoma moving above 9.50 cents a gallon on Aug. 6.

Kerosenes furnished one of the most interesting features of the week, with an active buying flurry and very little goods available for prompt shipment. Prices advanced 0.375 to 0.50 cent a gallon. Goods were reported scarce in all areas, with demand exceptionally strong.

Natural gasolines were generally unchanged most of the week, with demand sufficient to handle all spot goods.

Fuel oils were not as active the first of August, but no changes were noted in prices.

Distillates, gas oil, neutral oils, cylinder stocks and wax were steady.

Gasolines

THE first export gasoline purchases of any size since the crude and tank wagon gasoline advances late in July and early in August were reported Aug. 9 and 10. One large export company bought 1,000,000 gallons of 64-66, 375 e.p. gasoline from north Texas refiners at 10.50 cents a gallon and reports at the close of business Aug. 11 were that this company was seeking options on more goods of the same grade at the same price.

Another export company bought 250,000 gallons of 58-60 U. S. Motor from north Texas refiners at 9.625 cents. This purchase was for immediate shipment. The exporter was reported to have a cargo scheduled for loading at the Gulf Aug. 15 and needed between 250,000 and 500,000 gallons to complete the order. It was not known definitely if the buyer would seek the full 500,000 gallons.

Prices on all grades of refined gasolines advanced fractionally during the week in the Mid-Continent. Inquiries and orders continued to pour into refiners' offices from virtually all sections of the middle west.

Demand for the lower gravity gasolines has increased materially. This probably is due in a large measure to the narrower margins jobbers now have in most of the territory.

Kansas refiners report almost without exception they are completely sold up on all grades of gasoline. One or two have been buying some gasolines from other refiners.

Oklahoma refiners report their stocks are low and a few of them say their tanks are almost dry and that they book only enough orders to take care of their daily production. As in the case of Kansas, several Oklahoma refiners have been forced to cover a part of their orders by purchases from other refiners.

Texas refiners have been working on export orders booked prior to the crude advance and have paid but little attention to the domestic market. The renewal of export buying may keep them busy for another two to four weeks. Domestic demand has been steady throughout the state.

Arkansas and Louisiana refiners report they are completely sold up at present. Two or three say they are sold up for the remainder of the month. Stocks also are low in that area, and with little or no competition from north Texas the refiners are being kept busy supplying the trade in the southeast without the necessity of moving any goods into Standard of Indiana or Standard of Ohio territory.

Kerosenes

Development of a flurry of kerosene buying furnished the major interest for the week. Buyers combed the field for goods with only partial success. Prices of 41-43 water white grade advanced from 5.50 cents Aug. 4 to 6 cents Aug. 11, and only odd lots could be obtained at that price. One or two refiners as late as Aug. 11 had quotations out at 5.75 cents a gallon, but they were refusing to sell except to their most regular customers, and the quotations were not considered representative of the going market. A few refiners on the other hand were quoting up to 6.25 cents a gallon, but said they had no goods to sell.

The demand was from refiners as well as jobbers. Two or three refiners in Kansas were extremely anxious to obtain goods, while two or three large companies in Oklahoma bought wherever possible. There was little kerosene reported available in north Texas. Exporters already had about cleaned that area. The representative of one large company which has its own distributing system in the state said early in the week that the company's station demand for kerosene increased 40 per cent in July. He attributed this increase to the open weather which has permitted active harvesting and considerable plowing.

Several of the trade said this week that the harvesting and plowing, as well as the threshing in much of the middle west, has caused the demand to increase. In this connection it is interesting to note that, while kerosene stocks for the Mid-Continent as a whole, as shown by weekly operations reports to this publication from 81 Mid-Continent refiners, are considerably above the stocks on hand at this time a year ago, virtually all of the increase is in Kansas.

Stocks of kerosene on hand Aug. 3 for the field as a whole were 13,852,000 gallons, as compared with 12,673,000 gallons on Aug. 5, 1927, and 9,381,000 gallons on Aug. 6, 1926. On Sept. 3 stocks of kerosene were down to 7,645,000 gallons. It will be recalled that at that time kerosene prices were well above 9 cents a

(*Continued on Page* 106)

Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

PENNSYLVANIA	Prices Aug. 13	Prices Aug. 6	Prices July 30
52-54 Naphtha	10.75 –11.00	10.25 –10.75	10.25 –10.75
54-56 Naphtha	10.75 –11.00	10.25 –10.75	10.25 –10.75
58-60 U.S. Motor 437 e.p.	11.25 –11.50	11.00 –11.25	10.75 –11.25
60-62 400-410 e.p. gasoline	11.50 –12.00	11.50 –12.00	11.00 –12.00
64-66 390 e.p. gasoline	12.00 –12.50	11.75 –12.50	11.75 –12.00
68-70 Str-run gas. 350-360 e.p.	13.00 –13.50	12.50 –13.00	12.00 –13.00
‡OHIO			
58-60 U.S.Motor,delivered in Ohio, tax to be added	.....	12.75	12.00
‡Quotation of S. O. Ohio.			
OKLAHOMA			
48-50 540 e.p. naphtha	†8.75	†8.50 – 8.75	†8.25 – 8.50
50-52 450 e.p. naphtha	†8.75	†8.50 – 8.75	†8.25 – 8.50
56-58 450 e.p. gasoline	9.125– 9.25	9.00	8.375– 8.625
58-60 450 e.p. gasoline	9.25	9.00 – 9.25	8.625
64-66 390 e.p. gasoline	10.50	10.25	9.75 – 9.875
68-70 350-360 e.p. gasoline	10.75 –11.00	10.75 –11.00	10.25 –10.50
OKLAHOMA (Weighted Average Prices)			
58-60 U.S. Motor, 437 e.p.	9.6232	9.5227	9.0250
60-62 437 e.p. gasoline	9.9750	9.7361	9.1250
60-62 400 e.p. gasoline	.....	9.9167	9.5030
64-66 375 e.p. gasoline	10.7500	10.3438	9.9375

Above are weighted average prices, current week's prices being effective on Saturday, instead of Monday, the last day on which weighted averages are available for publication in this table. Weighted average prices for the current Monday are published on page 19 of this issue. The two previous weeks' prices shown are corrected to show Monday's prices, effective on the dates shown at the top of the columns.

KANSAS (F. O. B. refinery Kansas destination)			
58-60 U.S. Motor 437 e.p.	9.75 – 9.875	9.625– 9.75	9.25
60-62 400 e.p. gasoline	10.25	10.00 –10.25	9.75
64-66 375 e.p. gasoline	10.75	10.50	10.25
NORTH TEXAS			
48-52 450 e.p. naphtha	†9.00	†8.75 – 9.00	†8.00
56-58 450 e.p. gasoline	†9.00	†9.00	†8.50
58-60 450 e.p. gasoline	†9.25	†9.00 – 9.25	†8.50 – 8.75
58-60 U.S. Motor 437 e.p.	9.75	9.625– 9.75	9.25
60-62 400 e.p. gasoline	10.25	10.00	9.50
64-66 390 e.p. gasoline	10.375–10.50	10.25	9.75
64-66 375 e.p. gasoline	10.625–10.75	10.50 –10.75	10.25 –10.375
68-70 350-360 e.p. gasoline	10.75 –11.00	10.75 –11.00	10.50 –10.75
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	10.25	10.00	9.50
ARKANSAS (Arkansas destination only)			
56-58 450 e.p. gasoline	9.00	9.00	8.50
58-60 450 e.p. gasoline	9.25	9.25	8.75
58-60 U.S. Motor 437 e.p.	10.25	10.00	9.375– 9.50
‡CALIFORNIA			
54-58 U.S. Motor 437 e.p.	9.00 –12.50	9.00 –12.50	9.00 –12.50
58-61 U.S. Motor 437 e.p.	9.50 –13.50	9.50 –13.50	9.50 –13.50
42-45 Eng. dis. 445-480 e.p.	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00

‡3c tax to be added to alifornia gasoline prices if used in state.

NATURAL GASOLINE

(Note End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery	10.75	10.375–10.50	9.75
Grade A, 72-79.9, 90% Recovery	10.75	10.375–10.50	9.75
Grade BB, 84-92, 85% Recovery	10.50	10.375–10.50	9.75
Grade B, 76-83.9, 85% Recovery	10.50	10.375–10.50	9.75
Grade C, 80-92, 78% Recovery	10.50	10.375–10.50	9.75
NORTH TEXAS (F. O. B. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery	10.75	10.375–10.50	9.75
Grade A, 72-79.9, 90% Recovery	10.75	10.375–10.50	9.75
Grade BB, 84-92, 85% Recovery	10.50	10.375–10.50	9.75
Grade B, 76-83.9, 85% Recovery	10.50	10.375–10.50	9.75
Grade C, 80-92, 78% Recovery	10.50	10.375–10.50	9.75

‡All grades naturals represent quotations and offers to buy.

NORTH LOUISIANA (F. O. B. Monroe District)			
Grade AA	†11.00	†10.75 –11.00	†10.00 –10.25
Grade BB	†10.75 –11.00	†10.75 –11.00	†10.00 –10.25
Grade C	†10.75 –11.00	†10.75 –11.00	†10.00 –10.25
CALIFORNIA			
75-85, 375-390 e.p. blend	6.75 – 7.00	6.50 – 7.00	6.00 – 7.00

MOTOR FUEL BLENDS

OKLAHOMA			
64-66 Blend 437 e.p.	†9.50	†9.00	†8.75

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene	6.50	6.00 – 6.25	6.00 – 6.625
46 w.w. kerosene	6.75 – 7.00	6.50 – 7.00	6.50 – 7.00
47 w.w. kerosene	7.00 – 7.25	6.75 – 7.25	6.75 – 7.25
300 mineral seal	7.25 – 7.75	7.25 – 7.75	7.25 – 7.75

OKLAHOMA	Prices Aug. 13	Prices Aug. 6	Prices July 30
41-43 w.w. kerosene	6.00	5.50 – 5.75	5.25 – 5.50
42-44 w.w. kerosene	6.25 – 6.50	6.00 – 6.25	5.75 – 5.875
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene	6.25	5.75 – 6.00	5.50 – 5.625
42-44 w.w. kerosene	6.50 – 6.75	6.25 – 6.50	5.75 – 6.00
NORTH TEXAS			
40-42 w.w. kerosene	5.75	5.125	4.75
41-43 w.w. kerosene	6.00	5.50 – 5.625	5.00
NORTH LOUISIANA (N. La. Ark. and Miss. destination)			
41-43 w.w. kerosene	6.00 – 6.25	5.75 – 6.00	5.50
ARKANSAS (Arkansas destination only)			
42-44 kerosene	6.50	5.75 – 6.00	5.50 – 5.75
CALIFORNIA			
38-40 w.w. kerosene	5.50 – 6.00	5.50 – 6.00	5.50 – 6.00

NEUTRAL OIL

PENNSYLVANIA Vis.		(Viscosity at 70°F.)	
200 No. 3 Assoc. Filt.	31.50 –33.00	31.50 –33.00	31.50 –33.00
180 No. 3 Assoc. Filt.	30.00 –31.50	30.00 –31.50	30.00 –31.00
150 No. 3 Assoc. Filt.	25.50 –27.00	26.00 –27.00	26.00 –27.00
	(Non Viscous)		
34 Grav. 330-340 Flash	7.50 – 9.00	7.50 – 9.00	7.50 – 9.00
36 Min. Neut, 300-305 Flash	6.50 – 7.50	6.50 – 7.50	7.75 – 8.00
OKLAHOMA Vis. Color		(Viscosity at 100°F.)	
100—No. 2	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
150—No. 3	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
150—No. 4	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
180—No. 3	9.00 –10.00	9.00 –10.00	9.00 –10.00
180—No. 4	9.50 – 9.75	9.50 – 9.75	9.50 – 9.75
180—No. 5	9.25 – 9.75	9.25 – 9.75	9.25 – 9.75
200—No. 3	9.625–11.00	9.625–11.00	9.625–11.00
200—No. 4	9.50 –10.75	9.50 –10.75	9.50 –10.75
200—No. 5	8.50 –10.00	8.50 –10.00	8.50 –10.00
220—No. 3	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4	12.25 –12.50	12.25 –12.50	12.25 –12.50
220—No. 5	11.50 –12.00	11.50 –12.00	11.50 –12.00
240—No. 3	13.50 –14.00	13.50 –14.00	13.50 –14.00
240—No. 4	13.25 –13.50	13.25 –13.50	13.25 –13.50
240—No. 5	12.00 –13.00	12.00 –13.00	12.00 –13.00
280—No. 3	15.50 –16.50	15.50 –16.50	15.50 –16.50
280—No. 4	15.25	15.25	15.25
280—No. 5	14.00 –15.00	14.00 –15.00	14.00 –15.00
300—No. 5-6	17.00	17.00	17.00
GULF COASTAL Vis. Color		(Viscosity at 100°F., pour test 0)	
100—No. 2 Unfilt. Pale	7.25 – 7.50	7.25 – 7.50	7.00 – 7.50
200—No. 3 Unfilt. Pale	10.50 –10.75	10.50 –10.75	10.25 –10.75
300—No. 3 Unfilt. Pale	11.50 –11.75	11.50 –11.75	11.25 –11.75
500—No. 3½ Unfilt. Pale	13.50 –13.75	13.50 –13.75	13.25 –13.75
750—No. 4 Unfilt. Pale	15.75 –16.00	15.75 –16.00	15.50 –16.00
200—No. 5½ Red Oil	8.50 – 8.75	8.50 – 8.75	8.25 – 8.75
300—No. 5½ Red Oil	9.50 – 9.75	9.50 – 9.75	9.25 – 9.75
500—No. 6 Red Oil	11.00 –11.25	11.00 –11.25	10.75 –11.25
750—No. 6 Red Oil	13.75 –14.00	13.75 –14.00	13.50 –14.00
CALIFORNIA Vis. Color		(Viscosity at 100°F.)	
100—No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200—No. 3	11.50 –12.00	11.50 –12.00	11.50 –12.00
300—No. 3	13.00 –13.50	13.00 –13.50	13.00 –13.50
450—No. 3	15.50 –16.00	15.50 –16.00	15.50 –16.00
550—No. 3	16.50 –17.00	16.50 –17.00	16.50 –17.00
600—No. 3	17.00 –17.50	17.00 –17.50	17.00 –17.50
200—No. 5	11.00 –11.50	11.00 –11.50	11.00 –11.50
300—No. 5	12.00 –12.50	12.00 –12.50	12.00 –12.50
400—No. 5	14.00 –14.50	14.00 –14.50	14.00 –14.50
500—No. 5	15.00 –15.50	15.00 –15.50	15.00 –15.50
600—No. 5	16.00 –16.50	16.00 –16.50	16.00 –16.50
700—No. 7	18.00 –18.50	18.00 –18.50	18.00 –18.50

CYLINDER STOCKS

**OKLAHOMA			
190-200 Vis.at 210° Brt.St.	31.00 –32.00	31.00 –32.00	31.00 –32.00
150-160 Vis.at210° Brt.St.	23.00 –25.00	23.00 –25.00	22.00 –25.00
600 E.St.140-150Vis.-210°	17.00 –18.00	17.00 –18.00	17.00 –18.00
600 St. Ref. Olive Green	8.00 –10.00	8.00 –10.00	8.00 –10.00
600 St. Ref. Dark Green	6.00 – 8.00	6.00 – 8.00	6.00 – 8.00
Black Oil	5.00	5.00	5.00
PENNSYLVANIA		(1-inch Immersion Test)	
600 Steam Refined	12.50 –13.50	12.25 –13.50	12.25 –13.50
650 Steam Refined	14.50 –15.50	14.50 –15.50	14.50 –15.50
600 Flash	17.50 –18.50	17.50 –18.50	17.50 –18.50
625 Flash	26.00 –29.00	26.00 –29.00	26.00 –29.00
600 Warren E	18.50	18.50	18.50
600 Oil City E	16.00 –17.50	16.00 –17.50	16.00 –17.50
600 D Filtered	22.50 –24.50	22.50 –24.50	22.50 –24.50
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No.8color	36.00 –36.50	36.00 –36.50	36.00 –36.50
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	34.00 –34.50	34.00 –34.50	34.00 –34.50

(Note—Prices of total immersion test goods average 1 to 3 cents per gallon higher)

†Prices nominal ††Only one refiner quoting *Quotations only

**Represents both sales and quotations

Compilation Of Mid-Continent Refinery Operations

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National Petroleum News

Mid-Continent Refinery Operations Week Ended August 10 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	North La.-Ark.	Total Week Ended Aug. 10	Total Week Ended July 13
Plants Reporting	12	29	28	12	81	80
Crude Capacity	92,000	160,200	127,600	54,900	434,700	431,700
Cracking Capacity	30,700	52,600	17,200	22,700	123,200	123,200
Da. Av. Crude Runs	63,899 — 14.0	118,671 + 1.5	83,767 — 8.0	58,455 + 3.3	324,792 — 4.1	340,915
Da. Av. Other Oils	6,977 + 13.4	5,814 — 10.1	5,913 — 13.4	455 — 69.9	19,159 — 8.6	21,339
GASOLINE—Gallons						
Stocks, Aug. 3	9,383,000	24,749,000	13,963,000	2,364,000	50,459,000	71,215,000
Prod. 8-3 to 8-10	9,877,000 — 7.9	18,895,000 + 3.7	9,709,000 — 0.5	5,224,000 + 6.0	43,705,000 + 0.3	43,943,000
Ship. 8-3 to 8-10	10,473,000 — 13.8	21,074,000 — 2.8	11,072,000 — 3.6	4,552,000 — 18.0	47,171,000 — 7.3	48,872,000
Stocks, Aug. 10	8,787,000 — 6.4	22,570,000 — 8.8	12,600,000 — 9.8	3,036,000 + 28.4	46,993,000 — 6.9	66,286,000
Ratio Sales to Prod	106.0%	111.5%	114.0%	87.1%	107.9%	11.2%
KEROSENE—Gallons						
Stocks, Aug. 3	8,511,000	3,239,000	1,648,000	454,000	13,852,000	15,162,000
Prod. 8-3 to 8-10	1,844,000 — 13.8	3,047,000 + 24.4	1,487,000 + 3.5	265,000 + 25.0	6,643,000 + 6.5	6,685,000
Ship. 8-3 to 8-10	1,785,000 — 12.5	3,384,000 + 20.7	1,685,000 + 5.2	375,000 +118.0	7,229,000 + 9.2	7,693,000
Stocks, Aug. 10	8,570,000 + 0.7	2,902,000 — 10.4	1,450,000 — 12.0	344,000 — 24.2	13,266,000 — 4.2	14,154,000
Ratio Sales to Prod	96.8%	111.1%	113.3%	141.5%	108.8%	115.1%
STOVE DISTILLATE—Gallons						
Stocks, Aug. 3	2,134,000	2,558,000	546,000	64,000	5,302,000	4,789,000
Prod. 8-3 to 8-10	277,000 + 2.3	349,000 + 5.8	147,000 + 33.6	119,000 + 15.5	842,000 + 10.1	834,000
Ship. 8-3 to 8-10	212,000 — 14.9	88,000 — 74.0	125,000 + 23.8	111,000 + 5.7	536,000 — 32.4	665,000
Stocks, Aug. 10	2,149,000 + 0.7	2,819,000 + 10.2	568,000 + 4.0	72,000 + 12.5	5,608,000 + 5.8	4,958,000
Ratio Sales to Prod	93.4%	25.2%	85.0%	93.3%	63.7%	79.7%
GAS OIL—Gallons						
Stocks, Aug. 3	7,706,000	38,227,000	3,848,000	5,946,000	55,727,000	53,405,000
Prod. 8-3 to 8-10	1,246,000 — 38.4	3,306,000 — 23.9	1,626,000 — 23.3	2,159,000 — 5.5	8,337,000 — 22.6	7,251,000
Ship. 8-3 to 8-10	1,688,000 — 14.7	2,424,000 — 46.9	1,354,000 — 32.2	1,842,000 + 13.2	7,308,000 — 28.1	6,851,000
Stocks, Aug. 10	7,264,000 — 5.7	39,109,000 + 2.3	4,120,000 + 7.1	6,263,000 + 5.3	56,756,000 + 1.8	53,805,000
Ratio Sales to Prod	135.5%	73.3%	83.3%	85.3%	87.7%	94.5%
FUEL OIL—Gallons						
Stocks, Aug. 3	21,084,000	53,190,000	63,486,000	17,669,000	155,429,000	144,440,000
Prod. 8-3 to 8-10	6,888,000 — 12.9	8,950,000 + 12.2	11,056,000 — 17.4	8,776,000 + 6.1	35,670,000 — 5.0	41,145,000
Ship. 8-3 to 8-10	7,152,000 — 7.0	8,110,000 + 16.5	10,565,000 — 9.6	7,598,000 — 13.8	33,425,000 — 4.9	41,392,000
Stocks, Aug. 10	20,820,000 — 1.3	54,030,000 + 1.6	63,977,000 + 0.8	18,847,000 + 6.7	157,674,000 + 1.1	144,193,000
Ratio Sales to Prod	103.8%	90.6%	95.6%	86.6%	93.7%	100.6%

Gasoline Produced by Various Methods, Week Ended August 10

	Kansas	% of Total	Oklahoma	% of Total	Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,624,000	67.1	12,381,000	65.5	7,584,000	78.1	2,525,000	48.3	29,114,000	66.6
Cracked	2,667,000	27.0	5,486,000	29.0	1,768,000	18.2	2,146,000	41.1	12,067,000	27.6
Natural	586,000	5.9	1,028,000	5.5	357,000	3.7	553,000	10.6	2,524,000	5.8
Total	9,877,000		18,895,000		9,709,000		5,224,000		43,705,000	

+ or — columns are % change from previous week.

Gasoline Shipments Down, But Stocks Reduced

Staff Special—By Telegraph
TULSA, Aug. 14

GASOLINE shipments from 81 Mid-Continent refineries reporting weekly operations to this publication were approximately 3,500,000 gallons lower during the week ended August 10 than for the week ended August 3.

However, they were still sufficiently high to cause a draft of approximately 3,500,000 gallons on reserve stocks. Shipments for the week totaled 47,171,000 gallons, as compared with the record set the previous week of 50,865,000 gallons.

Gasoline stocks were reduced to 46,993,000 gallons for the field as a whole. At the current rate of shipments this still represents less than a week's supply. Each area except Louisiana-Arkansas drew on stocks. Shipments in that territory were a

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Aug. 10. Change in stocks figured from July 13.

GASOLINE

	Gallons
Production	178,371,000
Shipments	197,664,000
Net change in stocks	— 19,293,000
Ratio sales to production	110.8%

KEROSENE

	Gallons
Production	26,373,000
Shipments	27,261,000
Net change in stocks	— 888,000
Ratio sales to production	103.4%

STOVE DISTILLATE

	Gallons
Production	3,455,000
Shipments	2,805,000
Net change in stocks	+ 650,000
Ratio sales to production	81.2%

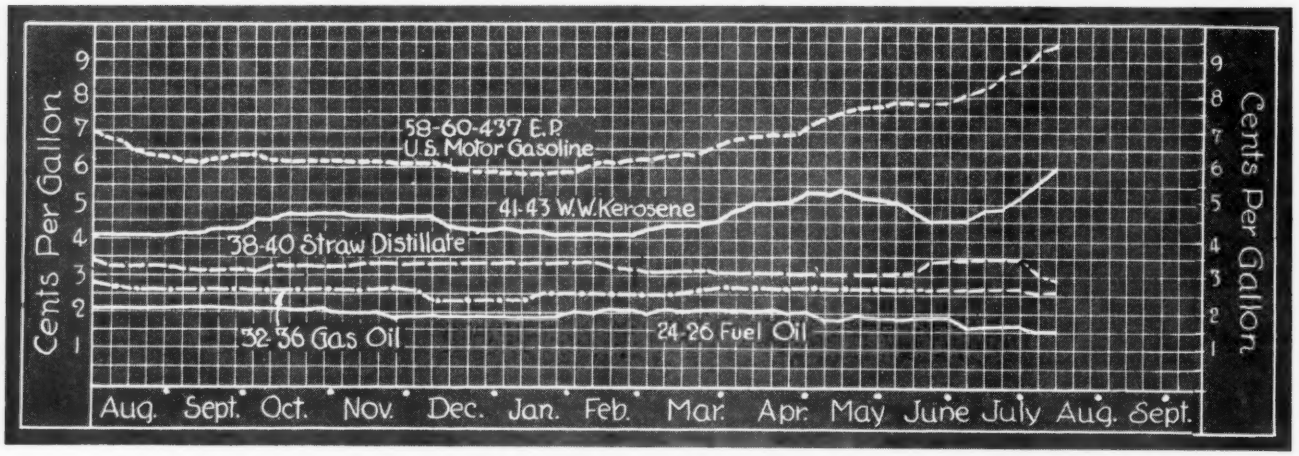
GAS OIL

	Gallons
Production	37,062,000
Shipments	34,111,000
Net change in stocks	+ 2,951,000
Ratio sales to production	92.0%

FUEL OIL

	Gallons
Production	150,006,000
Shipments	136,525,000
Net change in stocks	+ 13,481,000
Ratio sales to production	91.0%

Current Prices of Principal Mid-Continent Refined Products



Prices shown are on Group 3 basis and extended to date shown in Refinery Market Tables Section of this Issue

million gallons lower than for the previous week, while production was increased approximately 400,000 gallons.

Crude charges to stills were reduced approximately 14,000 barrels daily average for the field as a whole. Kansas refiners reduced charges slightly over 10,000 barrels daily, while Oklahoma refiners increased runs 1600 barrels daily. Texas refiners cut runs almost 8,000 barrels daily and the Arkansas-Louisiana group increased charges approximately 2,000 barrels daily average.

Despite the reduction in runs, the output of finished gasoline for the week was approximately 200,000 gallons higher than for the previous week. Production totaled 43,700,000 gallons. With gasoline shipments still at such a high peak it may be interesting to compare shipments for the past four weeks with those of the corresponding period last year.

Gasoline shipments for the period July 20 to August 10 totaled 197,664,000 gallons, as against production of 178,371,000 gallons, causing a net draft on stocks of 19,293,000 gallons. Shipments for the period of July 15 to Aug. 12, last year, totaled 156,000,000 gallons or 41,664,000 gallons less than for 1928. Production last year totaled 152,626,000 gallons, giving a net draft on stocks of 3,383,000 gallons. Production last year was 25,743,000 gallons lower than for the 1928 period. Shipments for the four weeks this year averaged 49,416,000 gallons, as compared with 39,000,000 gallons weekly average for the four weeks in 1927. Kerosene production for the field increased approximately 400,000 gallons, while shipments were higher by 600,000 gallons. The result was a draft of 500,000 gallons on stocks. Kansas refiners have almost twice as much kerosene in storage as all the remainder of the field. Both production and shipments were lower in Kansas, but stocks increased approximately 60,000 gallons to a total of 8,570,000 gallons.

While stocks for the field as a whole were 13,266,000 gallons at the close of the week, stocks in Oklahoma are virtually as low as they were on Sept. 3, 1926, when kerosene was extremely scarce in the Mid-Continent and the price was up to around 9.75 cents a gallon. Stocks in Texas, Louisiana and Arkansas are lower than at that time.

Stove distillate production increased slightly for the week, while shipments were 32.4 per cent lower than for the week ended August 3. Stocks August 10 totaled 5,608,000 gallons, as compared with 11,146,000 gallons on August 12, 1927.

Gas oil stocks were increased 1,000,000 gallons. Production was curtailed over 2,000,000 gallons, while shipments were lower by almost 3,000,000 gallons. Kansas was the only area to draw on stocks. Fuel oil production was reduced approximately 2,000,000 gallons, while shipments were not quite 2,000,000 gallons lower for the week. Stocks were increased 2,200,000 gallons to 157,674,000 gallons, as compared with stocks August 12, 1927, of 97,101,000 gallons.

Light Oils Active

(*Continued from Page* 103)

gallon, the price having advanced from around 7.50 cents a gallon the middle of July.

The report by districts, however, shows that Oklahoma refiners on Aug. 3, this year had 3,239,000 gallons on hand as compared with 3,150,000 gallons Sept. 3, 1926; the Texas refiners had 1,648,000 gallons as compared with 1,792,000 gallons, and the Arkansas-Louisiana refiners 434,000 gallons as compared with 509,000 gallons. The Kansas refiners this year had 8,511,000 gallons as compared with 2,194,000 in 1926. Indications are that most of the goods in storage not only in Kansas but in other areas is held by the large companies who own their own distributing systems and are not offering out burning oils on the spot market.

Natural gasolines moved within a narrow price range most of the week. Prices moved from 10.375 to 10.50 cents Aug. 7 and the bulk of trading was done at that figure until Aug. 11, when one buyer seeking grade AA paid 9.625 and 9.75 cents a gallon. At the same time grades BB and C continued to sell at 10.50 cents.

Demand was reported slower in some quarters but a check of the field indicated there was very little goods available for spot shipment. One or two large buyers are known to have buying power which they are expected to exert during the last half of the month.

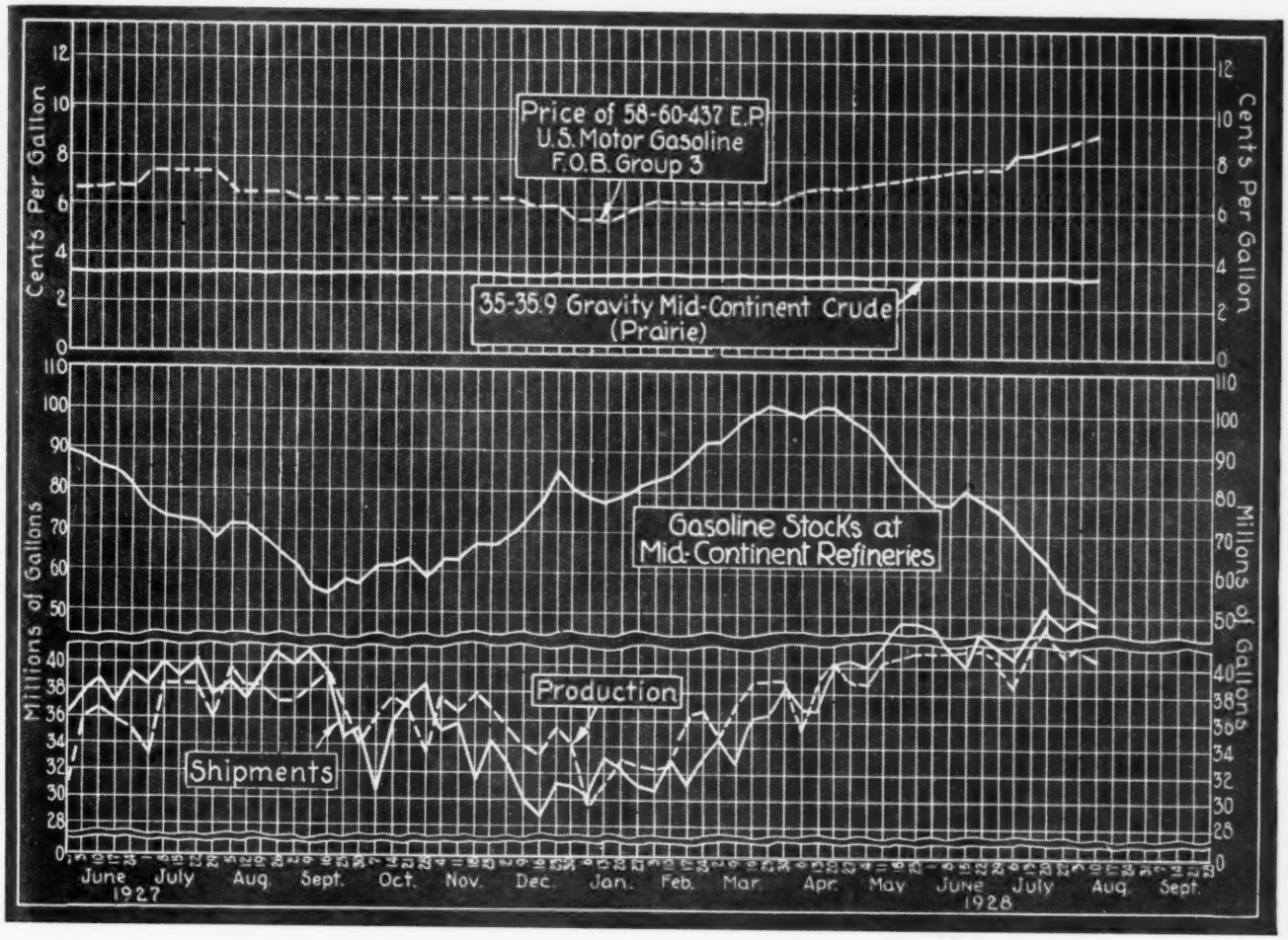
Prices of 38-40 straw distillate moved back to 3 cents a gallon in Oklahoma, with demand reported only fair. A few large jobbers continued to buy small quantities which refiners were inclined to believe went into storage. An active demand for distillates was not expected in Oklahoma before the middle of September.

Gas oil prices were unchanged with demand steady. Industrials were not as active as around the first of the month. Refiners buying straight reduced gas oils for cracking continued to pay prices in line with those shown in the markets table.

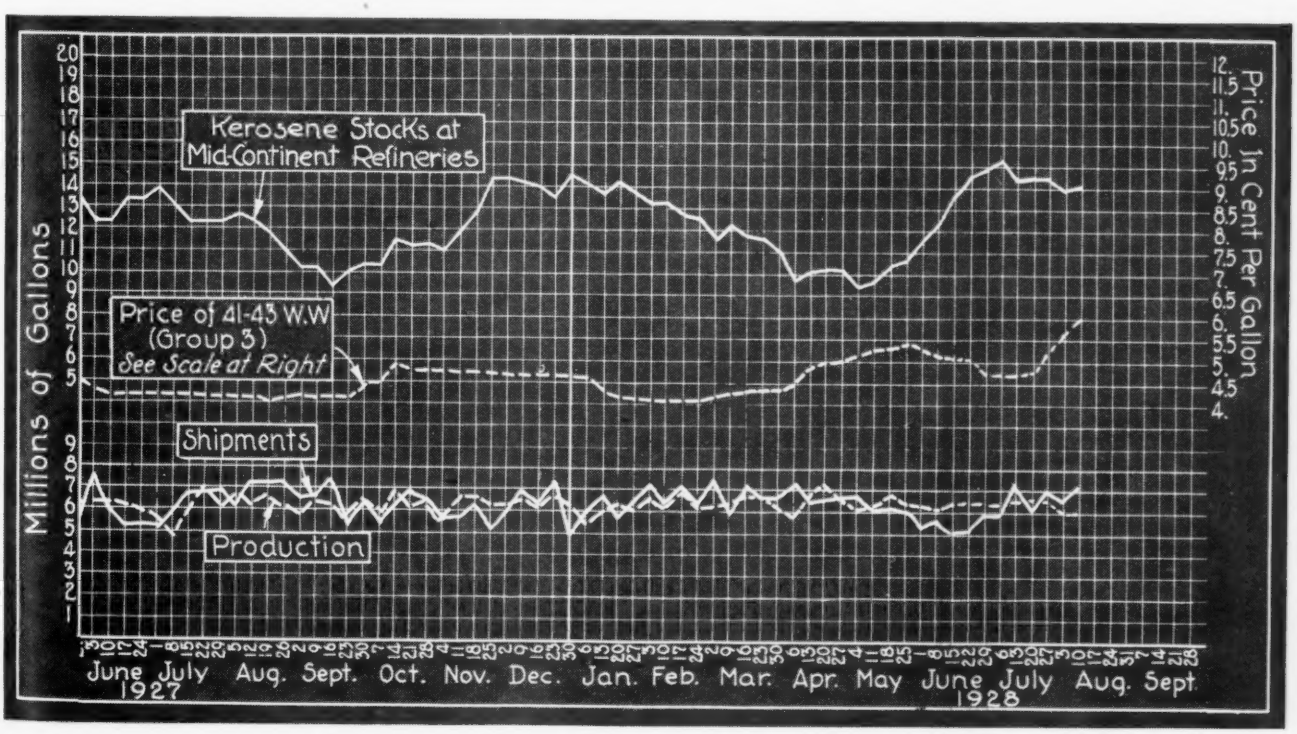
The activity shown in fuel oils around Aug. 1 had subsided somewhat before Aug. 11, but prices were generally unchanged. Reports were received here that considerable west Texas fuel oil had been moved into the Chicago market in competition with Group 3. Many refiners continued to burn large quantities of fuel oil in their own plants, and the situation as far as most of the Mid-Continent was concerned has shown a definite improvement in the past 15 days.

Barometer of Mid-Continent Refinery Market—Week Ending August 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 80 Plants to National Petroleum News


Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Cents Per Gallon
Gasoline Stocks at Mid-Continent Refineries
Production
Shipments
Millions of Gallons
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date shown in table on opposite page


Kerosene Stocks at Mid-Continent Refineries
Price of 41-43 W.W (Group 3) See Scale at Right
Shipments
Production
Millions of Gallons
Price In Cent Per Gallon
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

Refinery Markets on Wax and Heavy Oil Products

Prices given below are in cents per gallon, F. O. B. refinery, except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

WAX

PENNSYLVANIA	Prices Aug. 13	Prices Aug. 6	Prices July 30
Per pound, New York			
122-124 white crude scale	4.75	4.50 – 4.75	4.375– 4.75
124-126 white crude scale	4.75	4.50 – 4.75	4.50 – 4.75
OKLAHOMA			
**124-126 White Crude Scale	4.25	4.25	4.00 – 4.25
CALIFORNIA			
White crude scale, per pound, ton lots	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

FUEL OIL

PENNSYLVANIA			
36-40 fuel oil	4.75 – 5.00	4.75 – 5.00	4.75 – 5.125
30-34 fuel oil	4.25 – 4.50	4.25 – 4.50	4.25 – 4.75
28-32 fuel oil	4.125– 4.50	4.125– 4.50	4.125– 4.50
OKLAHOMA			
38-40 straw distillate	2.875– 3.00	2.875– 3.00	2.875– 3.00
36-38 straw distillate	2.75 – 2.875	2.75	2.75
32-36 gas oil, straw	†2.50 – 2.75	†2.50 – 2.75	†2.50 – 2.75
32-36 dark gas oil	2.375– 2.50	2.375– 2.50	2.375– 2.50
28-30 fuel oil (in bbls.)	$0.85 – 0.875	$0.85 – 0.875	$0.85 – 0.875
26-28 fuel oil (in bbls.)	$0.675– 0.725	$0.675– 0.725	$0.675– 0.725
24-26 fuel oil (in bbls.)	**$0.65– 0.675	*$0.65 – 0.675	*$0.65– 0.675
22-26 fuel oil (in bbls)	**$0.575–0.625	*$0.575– 0.625	*$0.575– 0.625
18-22 fuel oil (in bbls.)	**$0.55– 0.60	*$0.55 – 0.60	*$0.55 – 0.60
16-18 fuel oil (in bbls.)	**$0.55	*$0.55	*$0.55
14-16 fuel oil (in bbls.)	**$0.55	*$0.55	*$0.55
KANSAS (F. O. B. refinery Kansas destination.)			
38-40 straw distillate	3.50	3.50	3.25 – 3.50
36-38 straw distillate	3.125	3.125	3.00 – 3.125
32-36 gas oil	2.625– 2.75	2.625– 2.75	2.625– 2.75
24-26 fuel oil	*$0.75– 0.80	*$0.75 – 0.80	*$0.65 – 0.75
18-22 fuel oil	*$0.70	*$0.70	*$0.60 – 0.65
NORTH TEXAS			
38-40 straw distillate	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
32-36 gas oil, cracked	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
32-36 gas oil, uncracked	2.25 – 2.375	2.25 – 2.375	2.25 – 2.375
24-26 fuel oil (in bbls.)	$0.525– 0.55	$0.50 – 0.55	$0.50 – 0.525

†Prices Nominal ††Only One Refiner Quoting *Quotations only

GULF COASTAL	Prices Aug. 13	Prices Aug. 6	Prices July 30
Fuel (in bbls.)	$1.20 –$1.25	$1.20 –$1.25	$1.20 –$1.25
Gas oil	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
32-36 gas oil, dark	2.625– 2.875	2.625– 2.875	2.625– 2.875
32-36 gas oil, straw	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
16-20 fuel oil (in bbls.)	$0.70	$0.70	$0.65 – 0.70
ARKANSAS (Arkansas destination only)			
32-36 gas oil, straw	3.00 – 3.25	3.00 – 3.25	3.00 – 3.25
32-36 gas oil	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00
28-32 gas oil	2.75	2.75	2.75
Road Oil	$1.15	$1.15	$1.15
CALIFORNIA (F. O. B. San Joaquin Valley. At San Francisco, 4c per bbl. more)			
14-18 fuel oil (in bbls.)	$0.65 –$0.70	$0.65 –$0.70	$0.65 –$0.70
14-18 Bunker oil (in bbls.)	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
30-34 gas oil (in bbls.)	$1.00 –$1.20	$1.00 –$1.20	$1.00 –$1.20
27 Plus Diesel oil (in bbls.)	$0.90 –$1.00	$0.90 –$1.00	$0.90 –$1.00

‡PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f.o.b. refinery. In tank cars ⅝c to ¾c per pound less.)			
Snow White	8.25 – 8.50	8.25 – 8.50	8.25 – 8.50
Lily White	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
Cream White	6.25 – 6.50	6.25 – 6.50	6.25 – 6.50
Light Amber	3.50	3.50	3.50
Amber	3.25	3.25	3.25
Red	2.75 – 3.00	2.75 – 3.00	2.75 – 3.00

‡Only two refiners quoting petrolatums.

PETROLEUM COKE

**OKLAHOMA

(Per ton in car lots)

Lump	$4.50 –$5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$2.75 –$3.00	$2.75 – 3.00	$2.75 – 3.00
Breeze	$1.75 –$2.00	$1.75 – 2.00	$1.75 – 2.00

**Represents Both Sales and Quotations

California Refiners Watch Eastern Market

LOS ANGELES, Aug. 11

INCREASES in the price of gasoline in the East this week caused California refiners to show more interest in the outside markets, although quotations were the same as last week.

With tanker rates down to 70 to 73 cents a barrel, it is possible to move California gasoline to the East Coast at a profit on the basis of present markets, but it is not thought the movement will be in sufficient volume to have any bad effect on the general market.

Two cargoes of gasoline slightly under U. S. Motor specifications, were reported sold at 8.375 cents at San Pedro. According to local information, orders were placed in New York and not at the local headquarters of the selling company.

U. S. Motor is available at 8.50 cents up, with 390 and 400 end point holding at around one-half cent higher. Richfield Oil Co. has plenty of U. S. Motor since it took over the stocks held by Pan American, and Richfield is expected to figure prominently in the export market, especially for U. S. Motor. Most of the other larger companies manufacture 375, 390 and 400 end point.

There was no change in prices applying to tank car movement of gasoline, with this product moving at 9 to 9.50 cents into competitive territory. Goods moving to points within 200 to 300 miles of Los Angeles in tank cars were sold at various prices, all upward from 9.50 cents.

This trade is handicapped by the deadlock in the local gasoline price war. Apparently there is no change in this situation, as gasoline continues to sell at service stations from 12.75 up to the official service station price of 20.50 cents, tax included.

Fuel oil continues weak, although it was reported this week that the Japanese navy placed a contract for two or more cargoes of Grade B fuel at 81 cents. Tank car fuel continues to move at 65 to 70 cents, while those selling in the export trade are holding for 70 to 75 cents.

Natural gasoline is slightly stronger, with little spot stuff available at less than 6.50 cents, with a few cars moving at 7 cents. The better price is not on account of a decline in production, but due to increased use for blending and to more term contracts being signed.

Stocks of natural gasoline in California total very close to 1,000,000 barrels, the greatest on record.

Gas oil continues scarce. One small lot was sold this week in tank cars at $1, while the export price holds at $1.10 to $1.20 in cargo lots. Kerosene prices are unchanged.

Los Angeles Shipments

LOS ANGELES, Aug. 11.—Nineteen tankers left Los Angeles harbor, the week ended Aug. 4 for points outside Pacific Coast trade territory, carrying 1,072,460 barrels of petroleum products, a daily average of 153,209 barrels.

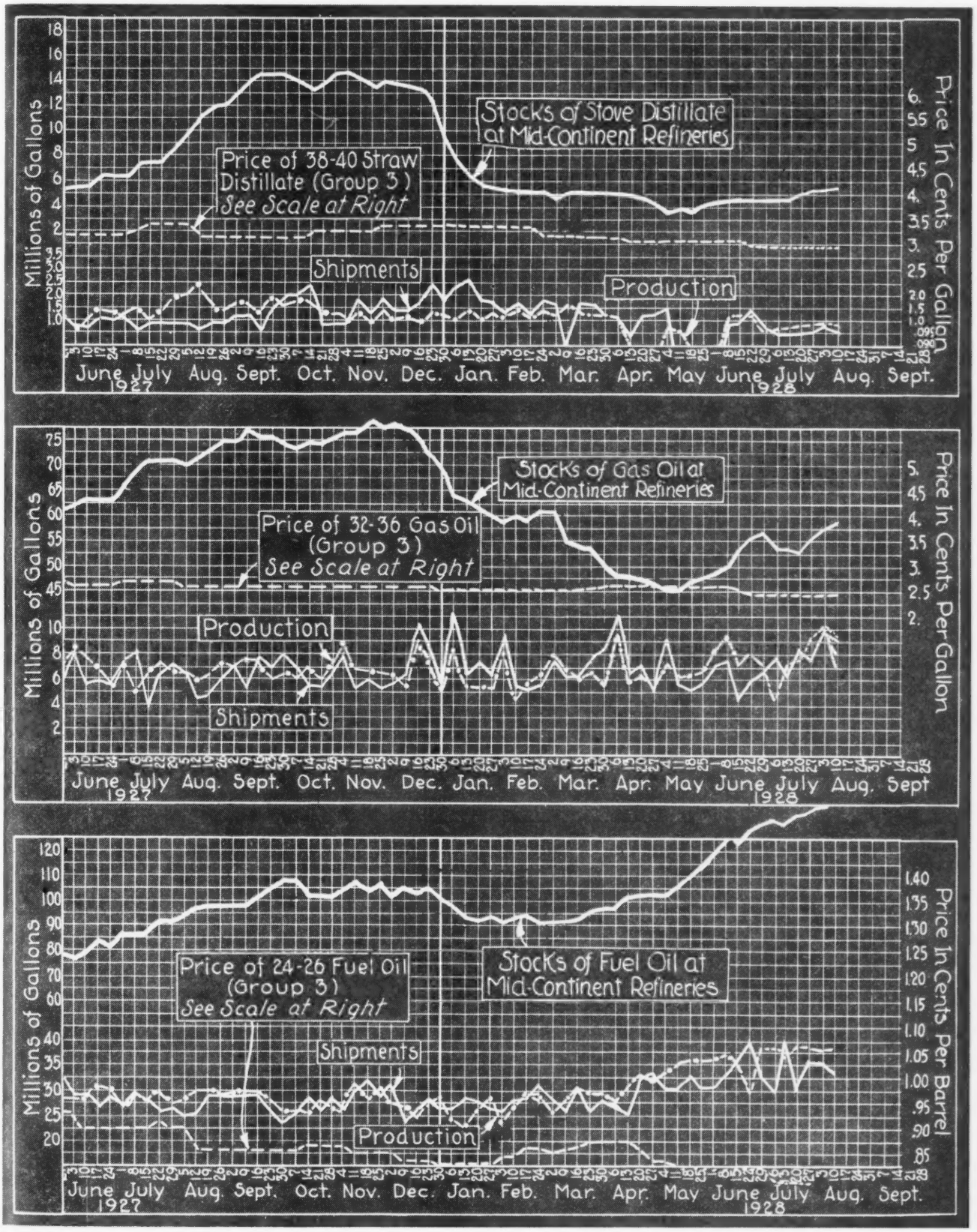
Total movement included 81,319 barrels of crude, 302,643 of fuel, 585,431 of gasoline, 21,282 of diesel, 74,116 of petrolite and 7,664 of benzol.

Products going to Pacific foreign points included 81,319 barrels of crude, 228,087 of fuel, 49,102 of gasoline, 21,282 of diesel and 74,116 of petrolite.

Atlantic domestic trade absorbed 404,242 barrels of gasoline and 7,664 of benzol. Atlantic foreign points drew 74,561 barrels of fuel and 132,087 of gasoline.

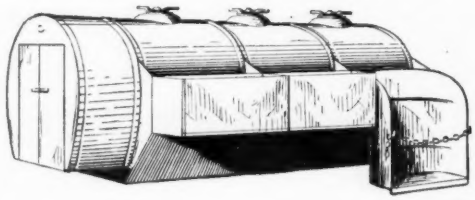
Barometer of Mid-Continent Refinery Market—Week Ending August 10

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 80 Plants to National Petroleum News


Millions of Gallons
Price In Cents Per Gallon
Stocks of Stove Distillate at Mid-Continent Refineries
Price of 38-40 Straw Distillate (Group 3) See Scale at Right
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928
Millions of Gallons
Price In Cents Per Gallon
Stocks of Gas Oil at Mid-Continent Refineries
Price of 32-36 Gas Oil (Group 3) See Scale at Right
Production
Shipments
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept
1927
1928
Millions of Gallons
Price In Cents Per Barrel
Price of 24-26 Fuel Oil (Group 3) See Scale at Right
Stocks of Fuel Oil at Mid-Continent Refineries
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept.
1927
1928

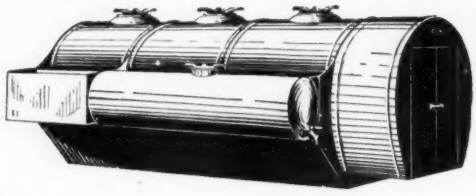
Convertible Truck Tank $150

Capacity Changes to Fit Current Demand and Road Conditions



In an hour a section of the side can racks is replaced with barrel carrier. 50 extra gallons may be carried on each side of the tank. Ride low down without making load top heavy.

Take off two sections of side racks on each side, replace with either 30 or 50 gallon side tanks and extra demand for gasoline, kerosene or lube oil is easily handled. Conversion is made in an hour's time.



Capacity of tank is 375 gallons. Side racks will handle 120 extra gallons in cans. Combination of side racks and side tanks gives up to 140 extra gallons. Combination of side racks and barrel carriers gives 180 extra gallons capacity.

Interchangeable on Chevrolet Trucks or New Ford Truck or others with back of cab lengths around 80 inches. 3-point supported. The tank, the mounting, the pipe lines and the bucket box are welded into an integral unit of steel. $150.00 includes side racks f. o. b. Kansas City. Faucets, side tanks and barrel racks are extra.

COLUMBIAN Partition Mounted 3 Point Supported TRUCK TANK

COLUMBIAN STEEL TANK COMPANY
KANSAS CITY, MISSOURI

A TRAINED STAFF at Every IMPORTANT CENTER

The OILGRAM has its own staff of trained petroleum market reporters at each of the four major refining and marketing centers. These men are in close contact with the markets EVERY DAY. That, and that only, is their job.

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What Can We Do? Jobbers In Wisconsin Ask

(*Continued from Page* 101)

your city to meet your cut unless it also discontinues its rebates. The above anti-discrimination law prevents them from cutting the price in any town below the price charged by competitors unless they are making a general cut all over their territory. If, in the situation I have outlined, they were to meet your reduced local price by making a local reduction in their price, then they would have cut below your price to all customers who receive a rebate, and this they can not do."

Wisconsin's anti-discrimination law does not differ greatly from those on the statute books of other states. To find a company guilty of violating it, the state must prove intent to damage a competitor. However it has been invoked effectively in Wisconsin. In an extreme case the law provides that an offending company may be ousted from the state.

Gasoline Plant Proposed For Crane County

HOUSTON, Aug. 9.—The first attempt to recover raw natural gasoline from the high sulfur gas of the Crane county area, in west Texas, is about to be made.

Engineers of the Phillips Petroleum Co., Bartlesville, are at Odessa working on plans for a plant.

Hydrogen sulfide gas that is now going to waste in the field because of the inability of operators to make use of it under normal conditions would be reclaimed under a special process said to have been perfected by the Phillips company at Bartlesville. A similar plant for gasoline recovery from natural gas may be constructed in Winkler county by the Phillips interests.

Gas Discovery Made in Louisiana Area

HOUSTON, Aug. 9.—Further testing of an area six miles north of Mansfield, in De Soto parish, La., will be stimulated by the finding of a 40,000,000 cubic foot gas flow in the R. O. Roy et al. No. 1 Fullerton, sec. 6-13-13.

At total depth of 2827 feet the well made its maximum gas flow under reservoir pressure of 1235 pounds. The well is in a generally northwesterly direction from the old Naborton oil development and similarly is located about half way across De Soto parish from the settled Crichton district.

Install Cracking Units on Coast

LOS ANGELES, Aug. 10.—Graver Corp. is installing a Jenkins cracking unit, 1000 barrels daily charging capacity, at the Hercules Gasoline Co.'s refinery at Vernon, a Los Angeles suburb.

Two 1000-barrel Jenkins units are also being installed at the Rio Grande Oil & Refining Co.'s plant at Los Angeles. The three units mentioned are expected to be in operation around Oct. 1.

Although Western Oil & Refining Co. has been operating for some months, a 500-barrel Jenkins unit and a 1000-barrel unit is now being placed.

Before Jan. 1, five Jenkins cracking units, with a combined capacity of 4500 barrels, will be in operation in Southern California.

Merco Nordstrom Moves

SAN FRANCISCO, Aug. 10.—Offices of Merco Nordstrom Valve Co., the Merrill Co. and the Alloys Co. have been moved to the top floor of 343 Sansome Street. Approximately 6,000 square feet have been leased for a period of years and a complete laboratory has been installed on the roof of the building to carry out experimental work. Announcement is also made that the Chicago office of the valve company will be moved in October from the Peoples Gas Bldg., to the Midland Bldg.

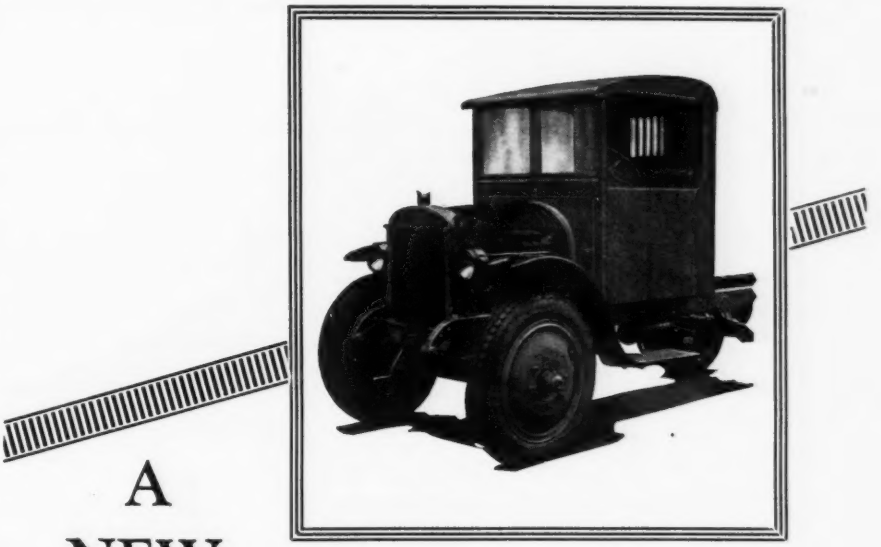
Sells Interest in Supply Company

LOS ANGELES, Aug. 11.—General Petroleum Corp., this week announced the sale of the company's interest in the Republic Supply Co. of California to P. M. Pike and his associates. The transaction is said to involve a cash payment of approximately $2,000,000.

Officers and directors of the company include P. M. Pike, chairman; J. A. Crawford, president; J. M. Cummins, vice-president and general manager; H. H. Glen, secretary; T. H. Beament treasurer and J. W. Schimd, sales manager.

The Butler Manufacturing Co., Kansas City, is now building its first airplane, the company announces, and may soon get into the production of metal planes. The Butler plant has the necessary equipment and skilled labor for the work, it is stated.

"Our plant is very adaptable to the production of all metal airplanes," said E. E. Norquist, president and general manager, "specializing as it does in the fabrication of sheet metal products. Our first plane, however, will be wood and fabric. Eventually, perhaps, we will manufacture metal biplanes and monoplanes, the former open, the latter of the cabin type with room for six passengers."



A NEW HIGHLAND CAB

MODEL RB 54

LIKE all Highland Cabs, this new Model RB-54 shows a keen insight into the driver's and owner's problems.

While it was especially designed for dump trucks, or trucks used in work which required considerable backing, it can be used wherever a curtain cab is preferred.

Notice the large, clear opening at the side, permitting the driver to see where he is going in backing up without straining or stretching himself from a safe driving position. This wide opening also facilitates signalling.

From top to bottom this Highland Cab is built for the most rugged service. The panels are of 16 gauge steel. The roof is of ⅛ inch steel as protection against falling materials and insulated to insure driving comfort.

And mounted on the Highland Rocker Sill Mounting, both driver and cab are relieved of the stresses and strains of rough going. The cab rides always on an even keel with the radiator. This mounting is a special Highland feature and is found on no other make of cabs.

But not until you use a Highland Cab and see how much better it is, how it speeds up deliveries and cuts down repairs will you realize that there can be such a difference between just a cab and Highland Cabs. Specify Highland Cabs on your next trucks—there is one for every make and model.

THE HIGHLAND BODY MFG. CO.
430 Elmwood Place Cincinnati, Ohio

HIGHLAND Cabs
with ROCKER SILL MOUNTING

STORAGE TANKS, FIELD-BUILT
Guarantee Thickness Material

BROWN TANKS ARE OIL-TIGHT
Double Electric Welded

Send us your inquiry

BROWN SHEET IRON & STEEL CO.
St. Paul Minnesota

Tank Wagon, Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t.w. and s.s. markets for 1927, 1926, 1925, 1924 arranged for quick reference)

These Prices in Effect Aug. 13, 1928, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	17	2	19	20	14
Newark, N. J.	17	2	19	20	14
Annapolis, Md.	17	4	21	23	14
Baltimore, Md.	17	4	21	23	12
Cumberland, Md.	17	4	21	23	14
Washington, D. C.	17	2	19	21	14
Danville, Va.	17	5	22	*	14
Norfolk, Va.	14	5	19	20	14
Richmond, Va.	17	5	22	24	14
Roanoke, Va.	17	5	22	24	14
Petersburg, Va.	17	5	22	24	14
Charleston, W. Va.	17	4	21	23	14
Keyser, W. Va.	17	4	21	23	14
Parkersburg, W. Va.	17	4	21	23	14
Wheeling, W. Va.	17	4	21	23	14
Charlotte, N. C.	17	4	21	23	14
Hickory, N. C.	17	4	21	23	14
Mt. Airy, N. C.	17	4	21	23	14
Salisbury, N. C.	17	4	21	23	14
Charleston, S. C.	17	5	22	24	14
Columbia, S. C.	17	5	22	24	14

*Dealers set own prices. S. O. New Jersey does not operate station.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

New York City	18	0	18	*20	15
Albany, N. Y.	18	0	18	21	15
Buffalo, N. Y.	18	0	18	20	15
Rochester, N. Y.	18	0	18	20	13
Syracuse, N. Y.	18	0	18	20	15
Boston, Mass.	18	0	18	20	15
Augusta, Me.	18	4	22	24	15
Manchester, N. H.	18	4	22	24	15
Burlington, Vt.	18	3	21	23	15

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator selling Socony gasoline.

ATLANTIC REFINING

Pittsburgh, Pa.	17	*	17	*22	14
Philadelphia, Pa.	17	*	17	*22	14
Allentown, Pa.	17	*	17	*22	14
Erie, Pa.	17	*	17	*22	14
Scranton, Pa.	17	*	17	*22	14
Altoona, Pa.	17	*	17	*22	14
Dover, Del.	17	3	20	22	14
Wilmington, Del.	17	3	20	22	14
Providence, R. I.	18	2	20	22	15
Boston, Mass.	18	0	18	20	15
Springfield, Mass.	18	0	18	20	15
Worcester, Mass.	18	0	18	20	15
Hartford, Conn.	18	2	20	22	14
New Haven, Conn.	18	2	20	22	15

*3-cent state tax is collected by retail dealer and paid by him directly to state.

S. O. KENTUCKY

Ashland, Ky.	16	5	21	23	15.5
Catlettsburg, Ky.	16	5	21	23	15.5
Lexington, Ky.	15	5	20	22	15.5
Louisville, Ky.	15	5	20	22	14
Covington, Ky.	16	5	21	21	15.5
Clarksdale, Miss.	16	4	21	22	14.5
Gulfport, Miss.	17.5	4	††21.5	23.5	14
Jackson, Miss.	16	4	20	22	14.5
Natchez, Miss.	15.5	4	19.5	21.5	14
Vicksburg, Miss.	15.5	4	19.5	21.5	14
Birmingham, Ala.	18	4	22	24	16
Mobile, Ala.	18	4	22	24	15
Montgomery, Ala.*	19	4	23	25	16.5
Atlanta, Ga.	18	4	22	24	††16.5
Augusta, Ga.	18	4	22	24	†15.5
Macon, Ga.	18	4	22	24	†16.5
Savannah, Ga.	17	4	21	21	14.5
Jacksonville, Fla.	17	5	22	24	13.5
Miami, Fla.	18	5	23	25	15.5
Tampa, Fla.	17	5	22	25	13.5
Pensacola, Fla.	18	5	**23	25	13.5

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. Mobile gasoline prices include 1c city tax.

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola, which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. INDIANA

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Chicago, Ill.	15	0	15	17	12
Decatur, Ill.	15.2	0	15.2	17.2	12.1
E. St. Louis, Ill.	14.1	0	14.1	16.35	11.2
Joliet, Ill.	15.4	0	15.4	17.4	12.3
Peoria, Ill.	15.2	0	15.2	17.2	12.1
Quincy, Ill.	15.2	0	15.2	17.2	11.9
Indianapolis, Ind.	15.2	3	18.2	20.2	13.2
Evansville, Ind.	15	3	18	20	13
South Bend, Ind.	15.4	3	18.4	20.4	13.4
Detroit, Mich.	15.8	3	18.8	20.8	13.7
Grand Rapids, Mich.	15.7	3	18.7	20.7	13.6
Saginaw, Mich.	15.9	3	18.9	20.9	13.8
Green Bay, Wis.	15.6	2	17.6	19.6	12.4
Madison, Wis.	15.3	2	17.3	19.3	12.1
Milwaukee, Wis.	15.1	2	17.1	19.1	11.9
La Crosse, Wis.	16.2	2	18.2	20.2	13
Minneapolis, Minn.	16.2	2	18.2	20.2	12.9
Duluth, Minn.	16.5	2	18.5	20.5	12.9
Mankato, Minn.	16.1	2	18.1	20.1	12.7
Des Moines, Ia.	15.5	3	18.5	20.5	12.3
Davenport, Ia.	15.5	3	18.5	20.5	12.3
Sioux City, Ia.	15.1	3	18.1	20.1	11.9
Mason City, Ia.	15.5	3	18.5	20.5	12.3
St. Louis, Mo.	*14.6	2	16.6	18.9	11.3
Kansas City, Mo.	†15.9	2	17.9	19.9	10.6
St. Joseph, Mo.	†15.5	2	17.5	19.5	11.2
Fargo, N. D.	17.9	2	19.9	21.9	14.9
Grand Forks, N. D.	18.2	2	20.2	22.2	15.2
Minot, N. D.	17.9	2	19.9	21.9	14.9
Pierre, S. D.	16.5	4	20.5	22.5	13.9
Huron, S. D.	16.5	4	20.5	22.5	13.9
Wichita, Kans.	13.8	2	15.8	17.8	10.8
Bartlesville, Okla.	13.5	3	16.5	18.5	10.5

S. O. Indiana's quantity discount schedule on tank wagon deliveries of gasoline is ½c for 750 gals. or more a month; 1c for 2,000 gals. or more a month; 1½c for 6,000 gals. or more a month; 2c for 10,000 gals. or more a month, and 3c for 15,000 gals. or more a month.

Service station discount is 2c per gal. to consumers of 200 gals. or more a month. All discounts adjusted annually.

*Includes city tax of ½c.

††Includes city tax of 1c.

CONTINENTAL OIL

Denver, Colo.	16	3	19	22	14.5
Pueblo, Colo.	16	3	19	22	14.5
Grand Junc., Colo.	19.5	3	22.5	25.5	18
Casper, Wyo.	16	3	19	22	13
Cheyenne, Wyo.	17	3	20	23	14.5
Butte, Mont.	20.5	3	23.5	26.5	19
Helena, Mont.	20.5	3	23.5	26.5	19
Salt Lake City, Utah.	17.5	3½	21	24	17
Boise, Ida.	19.5	4	23.5	26.5	19
Twin Falls, Ida.	19.5	4	23.5	26.5	19
Albuquerque, N. M.	16	5	21	24	17

S. O. CALIFORNIA

Phoenix, Ariz.	12	4	16	20	21.5
Los Angeles, Cal.	13.5	3	16.5	20.5	15.5
Fresno, Cal.	14	3	17	21	16.5
San Francisco, Cal.	14	3	17	21	15.5
Reno, Nev.	18	4	22	26	19
Portland, Ore.	14.5	3	17.5	21.5	16.5
Seattle, Wash.	14.5	2	16.5	20.5	16.5
Spokane, Wash.	18.5	2	20.5	24.5	20.5
Tacoma, Wash.	14.5	2	16.5	20.5	16.5

S. O. LOUISIANA

Little Rock, Ark.	16	2	21	23	12
Alexandria, La.	15	2	17	19	†14
Baton Rouge, La.	14	2	16	18	†12.5
Lake Charles, La.	15.5	2	17.5	19.5	†14
New Orleans, La.	*15.5	2	*17.5	*19.5	†14
Shreveport, La.	15.5	2	17.5	19.5	†13
Lafayette, La.	15	2	17	19	†13.5
Bristol, Tenn.	18	3	21	23	14
Chattanooga, Tenn.	17.5	3	20.5	22.5	15
Knoxville, Tenn.	18	3	21	23	15
Nashville, Tenn.	17	3	20	22	15
Memphis, Tenn.	14	3	17	19	14

*New Orleans gasoline prices include 1c parish tax in addition to 2c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

S. O. OHIO

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
All Ohio points	15	3	18	19	14

S. O. NEBRASKA

Omaha, Neb.	15.25	2	17.25	19.25	12.25
McCook	16.75	2	18.75	20.75	13.75
Norfolk	15.75	2	17.75	19.75	12.75
North Platte	16.75	2	18.75	20.50	13.50
Scottsbluff	16.75	2	18.75	20.75	13.25

MAGNOLIA PETROLEUM

Muskogee, Okla.	16	3	19	21	11
Oklahoma City	15	3	18	20	11
Tulsa, Okla.	14	3	17	19	11
Fort Smith, Ark.*	14	*3	17	19	12
Little Rock, Ark.	16	5	21	23	12
Texarkana, Ark.*	14.5	*3	17.5	21.5	12
Dallas, Tex.	14	3	17	21	11
Fort Worth, Tex.	14	3	17	20	11
Houston, Tex.	14	3	17	21	15
San Antonio, Tex.	14	3	17	20	10
El Paso, Tex.	15	3	18	21	16

*Within City of Texarkana and Fort Smith, the state tax on gasoline is 3c per gal. conforming with the Texas state tax. In these two districts outside of the city the 5c Arkansas tax applies.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.2	18
Detroit	16.4	17.9	19.7
Kansas City	†14.9	†16.4	†18.2
Milwaukee	15.4	*18.9	*20.7
Minneapolis	*18.7	*20.2	*22
St. Louis	14.6	16.1	17.9
New York		20	....

*Includes 2c state tax. †Includes 1c city tax.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

ONTARIO

	Gasoline		Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Toronto	20.5	3	23.5	27	22
Ottawa	20.5	3	23.5	27	22
Cochrane	25.5	3	28.5	..	27
Ft. William	23.5	3	26.5	30	23.5

MANITOBA

Winnipeg	22.5	3	25.5	29	22.5

SASKATCHEWAN

Regina	27	3	30	34	27

ALBERTA

Edmonton	27.5	3	30.5	34	27.5
Calgary	22.5	3	25.5	29	22.5

BRITISH COLUMBIA

Vancouver	21	3	24	28	22

QUEBEC

Montreal	21.5	5	26.5	30	22
Quebec City	22.5	5	27.5	31	23
Three Rivers	22.5	5	27.5	31	23

NEW BRUNSWICK

St. John	23.5	3	26.5	30	25
Moncton	23.5	3	26.5	30	25

NOVA SCOTIA

Halifax	23.5	5	28.5	32	25
Sydney	23.5	5	28.5	32	25

PRINCE EDWARD ISLAND

Charlottetown	23.5	5	28.5	32	25

Note: In districts surrounding these points 1c additional is added to city price.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Colorado, 1/10c on both; Florida, 1/8c; Indiana, 2/25c; Kansas, 1/50c; Louisiana, 1/32c on gasoline, 1c on kerosene; Minnesota, 3/50c; Missouri, 1/50c; Nebraska, 3/50 to 1/2c; North Carolina, 1/4c; North Dakota, 1/20c; Oklahoma, 4/25c; South Carolina, 1/8c; South Dakota, 1/10c; Tennessee, 2/5c on gasoline and 1/2c on kerosene; Wisconsin, 3/50c.

Kerosene inspection fees only: Iowa, 13/100c; Michigan, 1/5 to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above states or other states there are local inspection fees.

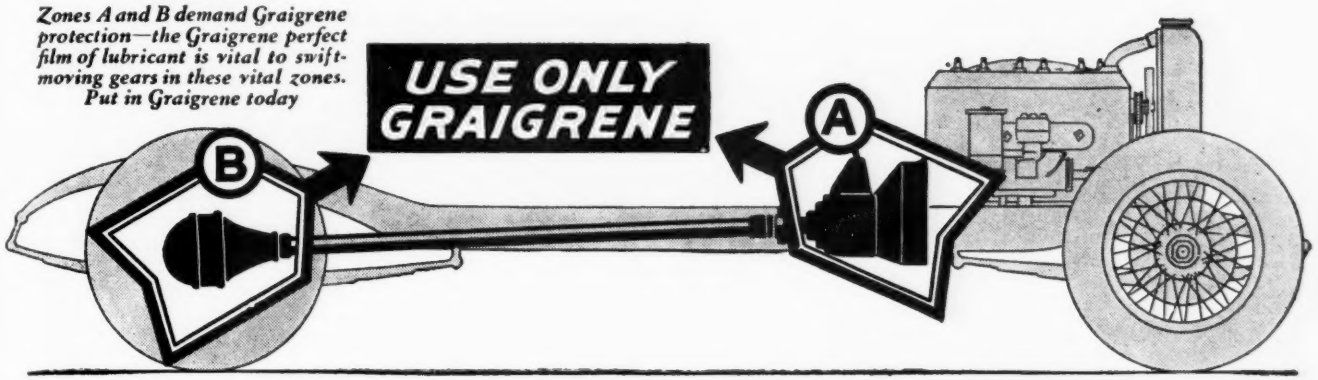
Zones of Profit!

—for GRAIGRENE dealers

Are you getting yours?

Put Graigrene in These Vital Zones!

Zones A and B demand Graigrene protection—the Graigrene perfect film of lubricant is vital to swift-moving gears in these vital zones. Put in Graigrene today



If you are not selling Graigrene, the perfect *fluid* lubricant for transmission and differential, you are passing up profits.

Correct lubrication of transmission and differential is just as vital as motor lubrication—yet many motorists put heavy grease in these vital areas and let it go at that. But heavy grease cannot and will not do the job.

Engineers prescribe a *fluid* lubricant, such as Graigrene. They know Graigrene flows freely, maintains its body despite weather conditions, and protects every single gear tooth with a tough film of oil *all the time.*

GRAIGRENE

—perfect for winter!

Graigrene always remains fluid, even when mercury drops 60° below zero. It never freezes up or channels. It protects swift moving gears *all the time.* Graigrene is vital to transmission and differential when winter comes. Cold weather is *profit weather* for Graigrene dealers. Get ready to cash in with Graigrene NOW—before the mercury drops.

Educating Motorists to Graigrene

Motorists are learning this story. Their instruction books advise a *fluid* lubricant—and Graigrene consumer advertising drives home the story. Every motorist in your community is a live prospect for Graigrene—and every motorist needs 8 pounds of Graigrene; while busses and trucks take 40 pounds. Count "your cars"—estimate the profits you will make by pushing Graigrene.

Get started with Graigrene now. You can pay your rent with Graigrene. See your local jobber or write to us today.

GET THE LONG GREEN WITH GRAIGRENE

Manufactured by

Viscosity Oil Company

Established 1894

W. D. SIMMONS, President

Central Manufacturing District, CHICAGO

Phone Yards 7196

Complete Seaboard Market

(Export markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the years 1924-1925-1926-1927)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, represent majority of quotations and sales.)

	Aug. 13	Aug. 6	July 30
U.S. Motor gasoline, New York harbor	11.75	11.25	11.25
U.S. Motor gasoline, Philadelphia	11.50 –11.75	11.25	11.25
U.S. Motor gasoline, Boston district	*12.25	*11.75	*11.75
U.S. Motor gasoline, Providence district	*12.25	*11.75	*11.75
U.S. Motor gasoline, Baltimore	11.75	11.25	11.25
U.S. Motor gasoline, Norfolk	11.75	11.25	11.25
U.S. Motor gasoline, Charleston	11.50	11.00	11.00
U.S. Motor gasoline, Savannah	11.25	10.75	10.75
U.S. Motor gasoline, Jacksonville	11.25	10.75	10.75
California U.S. Motor gasoline, New York Harbor	11.75 –12.00	11.25	11.25 –11.50
California U.S. Motor gasoline, Baltimore	11.75	11.25	11.25
California U.S. Motor gasoline, Philadelphia	11.50 –11.75	11.25	11.25
Water white kerosene, New York Harbor	7.75 – 8.00	7.50 – 8.00	7.50 – 8.00
Water white kerosene, Philadelphia	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Water white kerosene, Baltimore	7.75 – 8.00	7.50 – 8.00	7.50 – 8.00
28-34 gas oil, New York harbor	5.00	5.00	5.00
28-34 gas oil, Boston district	4.75	4.75 – 5.00	4.75 – 5.00
36-40 furnace oil, New York harbor	6.00	6.00	6.00
36-40 furnace oil, Boston district	6.00 – 6.25	6.25	6.25
Grade C bunker oil, New York harbor	$1.05	$1.05	$1.05
Grade C bunker oil, Boston district	$1.05 –$1.10	$1.10	$1.10
Diesel oil, New York harbor	$2.00	$2.00	$2.00

Note: Above prices do not include inspection tax levied in some states.
*Minimum of 13c delivered.

MEDICINAL OILS			
Russian 885-890 s.g. 325-330 vis	$0.80 – 0.90	$0.80 – 0.90	$0.80 – 0.90
Russian 870-875 s.g., 150-155 vis	$0.67 – 0.77	$0.67 – 0.77	$0.67 – 0.77
Russian 860-865 s.g., 80-85 vis	$0.65 –$0.75	$0.65 – 0.75	$0.65 – 0.75

New York Export Market

(Gasoline and kerosene in cases in bulk. Lubricating oils are per gal. in bbls. Cylinder oils are Penna. products.)

	Aug. 13	Aug. 6	July 30
U. S. Motor gasoline	26.90	26.90	26.90
43-45 150 w.w. kerosene	18.40	18.40	18.15
42-44 110 s.w. kerosene	17.40	17.40	17.15
CYLINDER OILS			
Bright stock, dark	40.00 –42.00	40.00 –42.00	40.00 –41.00
600 D filtered	30.00 –32.00	30.00 –32.00	30.00 –32.00
600 Warren E filtered	25.50	25.50	24.50 –25.50
600 s.r. unfiltered	20.00 –21.00	20.00	19.00 –20.00
650 s.r. unfiltered	22.50 –23.00	22.00	21.00 –22.00
600 flash, s.r.	25.00 –26.00	25.00 –26.00	24.00 –26.00
630 flash, s.r.	34.00 –36.00	34.00 –36.00	34.00 –36.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	19.50	19.50	19.50
250 vis. No. 6 color	18.50	18.50	18.50
200 vis. No. 6 color	18.00	18.00	18.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	23.50	23.50	23.50
180 vis. No. 3¼ color	19.50	19.50	19.50
100 vis. No. 2¼ color	15.50	15.25	15.25
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	34.50	34.50	34.50
500 vis. No. 6½ color	32.50	32.50	32.50
400 vis. No. 7¼ color	30.50	30.50	30.50
300 vis. No. 6 color	29.50	29.50	29.50
200 vis. No. 3¼ color	20.00	23.00	23.00
MEDICINAL OILS			
875-885 s.g.	$0.80	$0.80	$0.80
865-870 s.g.	$0.70	$0.70	$0.70

WAXES (In cents per pound, f.a.s. carload lots)
WHITE CRUDE SCALE (In barrels)

	Aug. 13	Aug. 6	July 30
122-124 A.m.p.	4.625– 4.75	4.50 – 4.75	4.50 – 4.75
124-126 A.m.p.	4.625– 4.75	4.50 – 4.75	4.50 – 4.875
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	5.25 – 5.375	5.125– 5.25	5.125– 5.25
125-127 A.m.p.	5.25 – 5.375	5.125– 5.25	5.125– 5.25
128-130 A.m.p.	5.50 – 5.625	5.375– 5.50	5.375– 5.50
130-132 A.m.p.	5.75 – 6.00	*6.00 – 6.125	*6.00 – 6.125
133-135 A.m.p.	6.75 – 7.00	*6.625– 6.875	*6.625– 6.875
135-137 A.m.p.	7.25	*7.125– 7.375	*7.125– 7.375
YELLOW CRUDE SCALE			
124-126 A.m.p.	4.375– 4.50	4.25 – 4.375	4.25 – 4.375

*Prices nominal.

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. and over otherwise noted, representing sellers' opinions, except those prices specified to the contrary)

GASOLINE	Aug. 13	Aug. 6	July 30
U. S. Motor	10.50	10.50	10.00
60-62, 400 e.p.	11.00	11.00	10.75 –11.00
61-63, 390 e.p.	11.75	11.50 –11.75	11.00 –11.25
64-66, 375 e.p.	12.00 –12.50	12.00 –12.50	12.00
U. S. Motor, cases (cargoes)	$1.95	$1.95	$1.90
64-66, cases (cargoes)	$2.10	$2.10	$2.05
*Sales only.			
KEROSENE			
44 water white	7.25 – 7.50	7.25 – 7.50	7.25
41-43 prime white	6.25 – 6.50	6.25 – 6.50	6.25
Water white, cases (cargoes)	$1.65	$1.65	$1.65
Prime white, cases (cargoes)	$1.55	$1.55	$1.55
*Sales only.			
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	3.875– 4.00	3.875– 4.00	3.875– 4.00
*30-32 translucent gas oil	4.00	4.00	4.00
Grade C bunker oil	$0.85 –$0.95	$0.85 –$0.95	$0.95 – 1.10
Grade C bunker oil, cargoes	$0.70	$0.70 –$0.75	$0.70 – 0.80
*Less than ½ of 1% sulfur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$1.00 –$1.02	$1.00 –$1.02	$1.00 –$1.02
Grade C bunker oil, for bunkering purposes, taxes paid	$1.10	$1.10	$1.10
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F.: cold test 0) (Tanker, f.o.b. Houston)			
100 vis. No. 2 unfiltered pale	5.75	5.75 – 6.00	5.75 – 6.00
200 vis. No. 3 unfiltered pale	8.50 – 9.00	7.75 – 8.00	7.75 – 8.00
300 vis. No. 3 unfiltered pale	9.50 – 9.875	9.25 – 9.50	9.25 – 9.50
500 vis. No. 3½ unfiltered pale	11.00 –12.00	10.50 –11.50	10.50 –11.50
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	15.50 –16.00	15.50 –16.00	15.50 –16.00
200 vis. No. 5-6 red oil	7.00 – 8.00	7.00 – 7.50	7.00 – 7.50
300 vis. No. 5-6 red oil	8.00 – 9.00	8.00 – 8.50	8.00 – 8.50
500 vis. No. 5-6 red oil	10.00 –10.50	10.00 –10.50	10.00 –10.50
750 vis. No. 5-6 red oil	11.25 –11.50	11.25 –11.50	11.25 –11.50
1200 vis. No. 5-6 red oil	14.50 –16.50	14.50 –15.50	14.50 –15.50

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Aug. 13	Aug. 6	July 30
Gasoline, U. S. Motor, 53-55 Gravity	8.50 – 9.00	8.50 – 9.00	8.50 – 9.00
Gasoline, U. S. Motor, blends and special cuts	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
Gas Oil, 30-34, per barrel	$1.10 –$1.20	$1.10 –$1.20	$1.10 –$1.20
Diesel Oil, 27 plus, per barrell	$0.95 –$1.10	$0.95 –$1.10	$0.95 –$1.10
Bunker oil, 14-18, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Fuel oil, 14-18 per barrel	$0.70 –$1.00	$0.70 –$1.00	$0.70 –$1.00
Kerosene, 38-40 w.w., 125-150 flash, per gal.	4.50 – 5.00	4.50 – 5.00	4.50 – 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125-150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

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Ashland Refining Company *Red Pepper Better Ethyl*	Refiners Oil Company *Refiners Ethyl*
Associated Oil Company *Associated Ethyl*	Root Refineries, Inc. *Red Chief Ethyl*
Atlantic Refining Company *Atlantic Ethyl*	Solar Refining Company *Solar Ethyl*
Beacon Oil Company *Colonial Ethyl*	Spears & Riddle Company *Fleet Wing Ethyl*
Continental Oil Company *Conoco Ethyl*	Standard Oil Co. (Indiana) *Red Crown Ethyl*
Crystal Oil Refining Corp. *Crystal Ethyl*	Standard Oil Co. (Kentucky) *Crown Ethyl*
Empire Oil Works *Empire Ethyl*	Standard Oil Co. of Louisiana *Standard Ethyl*
Humble Oil & Refining Co. *Humble Ethyl*	Standard Oil Co. (Nebraska) *Red Crown Ethyl*
Imperial Oil, Limited *Imperial Ethyl*	Standard Oil Co. (New Jersey) *Standard Ethyl*
Johnson Oil Refining Co. *Johnson Ethyl*	Standard Oil Co. (Ohio) *Red Crown Ethyl*
Kendall Refining Company *Kendall Ethyl*	Sterling Oil Company *Sterling Ethyl*
Liberty Oil Company, Ltd. *Liberty Pep Ethyl*	Texas Pacific Coal & Oil Co. *T.-P. Ethyl*
Louisiana Oil Refining Corp. *Loreco Ethyl*	Tide Water Oil Company *Tydol Ethyl*
Mexican Petroleum Corp. *Pan-Am Ethyl*	Union Oil Co. of California *Union Ethyl*
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Few Export Sales of Wax But Prices Strong

NEW YORK, Aug. 11.—Wax markets at New York and New Orleans continued relatively quiet this week but prices lost none of their recent strength.

Offerings of both white crude scale and fully refined grades were extremely light, and dealers reported it difficult to obtain bids for the few small orders they were asked to negotiate.

White crude scale sold at 4.625 cents a pound at New York and brokers were bidding freely for more goods at the same price. Refiners' ideas of the market were 0.125-cent higher.

Quotations for the fully refined grades also moved up 0.125-cent, with the majority of holders asking 5.25 to 5.375 cents for 125-127 A.m.p. and 5.50 to 5.625 cents for 128-130 A.m.p. The higher melting points were quoted nominally at prices 0.125 to 0.25-cent over those asked a week ago.

Scale was quoted at 4.50 to 4.625 cents at New Orleans, although it was said there was little goods available at the lower figure. Fully refineds were about on par with prices at New York.

Tanker Rates

NEW YORK, Aug. 13.—Approximate tanker freight rates in the following trades are, to Continental ports, in shillings per ton of 2240 pounds, British Sterling; to American ports, cents per barrels:

	Crude &/or Fuel	Refined Oil
Calif. to U.K. or Continental ports*	25/6	26/-
Gulf to U.K. or Continental ports*	15/	15/6
North Atlantic to U.K. or Continental ports*	12/	12/6
Calif. to North Atlantic ports (not E. of N. Y.)	50c	68-70c
**Gulf and North Atlantic ports (not E. of N.Y.)	17c	27c

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**For Venezuela loading 1c per bbl. additional. For Tampico loading, 4c per bbl. additional.

NEW YORK, Aug. 10.—Dr. Graham Edgar, director of research of the Ethyl Gasoline Corp., returned to New York this week. Dr. Edgar has been in London several weeks in connection with an investigation being conducted by the British Government on motor fuels containing tetraethyl lead, or similar lead-containing compounds. Findings of the committee appointed in the House of Lords to study the question were entirely satisfactory to Ethyl, Dr. Edgar reports.

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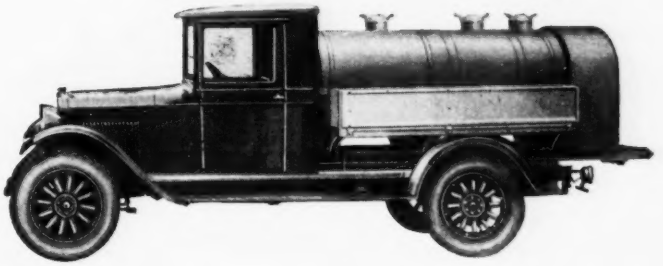

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FUEL OILS

LUBRICATING OILS
Cylinder, Engine, Cordage

RED AND PALE PARAFFINE OILS

Crude Oil Prices (in Effect Aug. 13)

(Crude prices for years 1924-1925-1926-1927 in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District)	$3.20
Bradford District Oil in National Transit Lines (Bradford District)	3.20
Penna. Grade Oil in National Transit Lines (Other Pennsylvania)	3.10
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania)	3.10
Penna. Grade Oil in Eureka Pipe Lines (West Virginia)	3.00
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district)	2.85
Keister Grade in National Transit Lines (Butler Co.)	1.20
Cabell Grade in Eureka Pipe Lines (West Virginia)	1.45
Corning Grade in Buckeye Pipe Lines (Ohio)	1.80
Corning, O., heavy grade	1.70
Somerset Oil in Cumberland Pipe Lines (Kentucky)	1.70
Ragland Grade in Cumberland Pipe Lines (Kentucky)	.95

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines	$1.55

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective July 27, 1928

Wooster	$1.67	Princeton	$1.55
Lima	1.60	Illinois	1.55
Waterloo	1.20	Plymouth	1.28
Indiana	1.37	West Kentucky	1.48

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia	$2.00
Oil Springs	2.07

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Prairie Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective July 26, 1928

Below 25	$0.60	35-35.9	$1.31
25-25.9	0.67	36-36.9	1.36
26-26.9	0.74	37-37.9	1.41
27-27.9	0.81	38-38.9	1.46
28-28.9	0.88	39-39.9	1.51
29-29.9	0.95	40-40.9	1.56
30-30.9	1.02	41-41.9	1.61
31-31.9	1.09	42-42.9	1.66
32-32.9	1.16	43-43.9	1.71
33-33.9	1.21	44 and above	1.76
34-34.9	1.26		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

Effective July 26, 1928

Below 25	$0.60	26-26.9	$0.74
25-25.9	0.67	27-27.9	0.81

Rest of schedule same as Prairie's.

Mirando, Tex.	$1.00

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

July 26, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades, unchanged from Feb. 16:

Below 25	$0.60	26-26.9	0.74
25-25.9	0.67	27-29.9	0.75
30-30.9			0.90
31-31.9			1.05
Glasscock, Crane, Upton, Winkler Counties			0.65
Chalkfield (Howard Co.)			0.80
Iatan district			0.93
Corsicana heavy			1.00

Carter Oil Co.

(Oklahoma and Kansas)

July 26, same schedule as Prairie plus these grades:

25-25.9	$0.67	27-27.9	$0.81
26-26.9	0.74		

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Hutchinson and Carson Counties:

Below 32	$0.69	38-38.9	$1.06
32-32.9	0.76	39-39.9	1.11
33-33.9	0.81	40-40.9	1.16
34-34.9	0.86	41-41.9	1.21
35-35.9	0.91	42-42.9	1.26
36-36.9	0.96	43-43.9	1.31
37-37.9	1.01	44 and above	1.36

Wheeler County:

Below 30	$0.65	37-37.9	$1.11
30-30.9	0.72	38-38.9	1.16
31-31.9	0.79	39-39.9	1.21
32-32.9	0.86	40-40.9	1.26
33-33.9	0.91	41-41.9	1.31
34-34.9	0.96	42-42.9	1.36
35-35.9	1.01	43-43.9	1.41
36-36.9	1.06	44 and above	1.46

Gray County:

Below 29	$0.68	37-37.9	1.21
29-29.9	0.75	38-38.9	1.26
30-30.9	0.82	39-39.9	1.31
31-31.9	0.89	40-40.9	1.36
32-32.9	0.96	41-41.9	1.41
33-33.9	1.01	42-42.9	1.46
34-34.9	1.06	43-43.9	1.51
35-35.9	1.11	44 and above	1.56
36-36.9	$1.16		

WEST TEXAS

Humble Oil & Refining Co.

Effective July 26, 1928

Winkler, Crane, Upton, Crockett, and Pecos Counties	$0.65

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective July 26, 1928

Below 28	$0.81	36-36.9	$1.36
28-28.9	0.88	37-37.9	1.41
29-29.9	0.95	38-38.9	1.46
30-30.9	1.02	39-39.9	1.51
31-31.9	1.09	40-40.9	1.56
32-32.9	1.16	41-41.9	1.61
33-33.9	1.21	42-42.9	1.66
34-34.9	1.26	43-43.9	1.71
35-35.9	1.31	44 and above	1.76

**Cotton Valley, below 36, $0.75. Beginning with 36-36.9, same schedule as above.

Smackover, below 24	$0.75
do 24 and above	.90
Bellevue	1.25
*Urania, La	.85
†East El Dorado	1.00

***Posted by Louisiana Oil Refining Corp.**

†Posted by Magnolia Petroleum Co.

Smackover prices posted on Feb. 7 by S. O. La. Gulf, Shreveport-El Dorado Pipe Line, Atlantic Oil Producing Co. and The Texas Co.; on Feb. 8 by Magnolia: on Feb. 6 by La. Oil Refg. Corp.

Effective Aug. 8 The Texas Co., in addition to meeting the Standard Oil Co. of La.'s posting in North Louisiana fields, posted the following prices for lower gravity crudes: 24-24.9, $0.60; 25-25.9, $0.67; 26-26.9, $0.74; 27-27.9, $0.81.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Below 28	$0.75	30-30.9	$0.87
28-28.9	0.79	31-31.9	0.91
29-29.9	0.84	32 and above	0.95

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective March 14, 1927

Grades A	$1.20	29-29.9	$1.25
Grades B:		30-30.9	1.27
Below 25	1.15	31-31.9	1.29
25-25.9	1.17	32-32.9	1.31
26-26.9	1.19	33-33.9	1.33
27-27.9	1.21	34-34.9	1.35
28-28.9	1.23	35 and above	1.37

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling and Pierce Junction. All other fields are Grades A only.

Crude Price Changes

OIL CITY—On Aug. 8 Joseph Seep Purchasing Agency advanced both grades of Corning crude 10 cents. Corning grade in Buckeye Pipe Line is now $1.80 and the heavy grade $1.70. Last previous change was 15-cent advance June 29.

* * *

SHREVEPORT—The Texas Co., effective Aug. 8, met the posting of Aug. 2 of the Standard Oil Co. of Louisiana in North Louisiana, and, in addition, posted the following prices for lower grades:

24-24.9	$0.60
25-25.9	.67
26-26.9	.74
27-27.9	.81

Carriers of government air mail travel 22,110 miles every day over 9,916 miles of airways.

Gulf Coast Lubricants Active

HOUSTON, Aug. 11.—Considerably increased movements of Gulf Coastal lubricants are anticipated for September and October by Houston district manufacturers. Trading is now active on various grades for future delivery and inquiries continue to be received for winter contract requirements of jobbers. Prices are reported firm at recently higher ranges.

Week's Price Changes Tank Wagon Markets

Gasoline

Standard of New Jersey—T.w. price of gasoline advanced 1 cent **Aug. 8** to 17 cents, exclusive of tax. S.s. price unchanged. This brings this state up to the level of the territory, which was advanced 1 cent t.w. **Aug. 6.**

Continental Oil—T.w. and s.s. price of gasoline at Albuquerque, N. M., advanced 1 cent to 21 and 24 cents. T.w. and s.s. prices at this point were reduced 2 cents **Aug. 1.**

Imperial Oil Ltd.—T.w. and s.s. prices of gasoline advanced generally throughout Canada east of the Great Lakes 1 cent **Aug. 7,** and in general cent and a half west of the Great Lakes. Among points not affected by this advance were Three Rivers, Quebec Province, and Calgary, Alberta Province.

* * *

Kerosene

Imperial Oil, Ltd.—The kerosene tank wagon market was advanced generally throughout Canada **Aug. 7,** the same date as the advance in the kerosene market. Amount of the advance in general 1 cent, although many local points varied.

Crude Oil Prices (in Effect Aug. 13)

(Crude prices for years 1924-1925-1926-1927 in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective March 14, 1927

Grades A	$1.20	*Grades B	$1.15
‡Grades B (light crude):			
35-35.9	$1.37	38-38.9	$1.43
36-36.9	1.39	39-39.9	1.45
37-37.9	1.41	40 and above	1.47

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective July 26, 1928)

‡Salt Creek	29-29.9	$0.95
" "	30-30.9	1.02
" "	31-31.9	1.09
" "	32-32.9	1.16
" "	33-33.9	1.21
" "	34-34.9	1.26
" "	35-35.9	1.31
" "	36-36.9	1.36
" "	37 and above	1.41
Elk Basin		1.48
Grass Creek light		1.48
Big Muddy		1.33
Lance Creek		1.48
Rock Creek		1.33
Mule Creek		1.10
Rex Lake		1.10
‡Osage		1.48
‡Cat Creek, Mont.		1.48
Sunburst, Mont.		1.65
‡Hogback, N. Mex.		1.48
Artesia, N. Mex.		1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

Standard Oil Co. of California

Santa Maria and Ventura Posted by Union Oil Co.

Gravity	Signal Hill Seal Beach Alamitos Heights Huntington Beach	Inglewood Torrance	Whittier La Habra	Newhall McKittrick Kern River	Olinda-Brea Canon Richfield	Athens-Rosecrans Dominguez	Montebello	Coyote Hills	Santa Fe Springs	Midway, Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Santa Maria	Ventura
14-14.9	$ .85	$ .85	$ .85	$ .75	$ .85	....	$ .85	$ .85	....	$ .75	$ .75	$ .75	$ .75	$ .85	$ .85
15-15.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
16-16.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
17-17.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
18-18.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
19-19.9	.85	.85	.85	.75	.85	....	.85	.85	....	.75	.75	.75	.75	.85	.85
20-20.9	.85	.85	.85	....	.85	....	.85	.85	....	.77	.77	.76	.76	.85	.85
21-21.9	.86	.86	.85	....	.86	....	.85	.86	$ .85	.79	.79	.77	.77	.85	.85
22-22.9	.87	.87	.85	....	.87	....	.85	.87	.85	.81	.81	.78	.78	.85	.85
23-23.9	.88	.88	....	....	.88	....	.85	.88	.85	.83	.83	.79	.79	.85	.85
24-24.9	.89	.89	....	....	.89	$ .89	.85	.89	.85	.85	.85	.80	.80	.85	.85
25-25.9	.90	.90	....	....	.90	.90	.86	.90	.86	.87	.87	.81	.81	.86	.86
26-26.9	.92	.92	....	....	.92	.92	.87	.91	.87	.89	.89	.83	.82	.87	.87
27-27.9	.94	.94	....	....	.94	.94	.88	.92	.88	.91	.91	.85	.83	.88	.88
28-28.9	.96	.96	....	....	.96	.96	.89	.93	.89	.93	.93	.87	....	.89	.89
29-29.9	.98	....	....	....	.98	.98	.90	.94	.91	.96	.96	.89	....	.91	.91
30-30.9	1.00	....	....	....	1.00	1.00	.91	.95	.93	.99	.99	.91	....	.93	.93
31-31.9	1.03	....	....	....	....	1.03	....	....	.95	1.02	1.02	.93	....	....	.95
32-32.9	1.06	....	....	....	....	1.06	....	....	.97	1.05	1.05	.95	....	....	.97
33-33.9	....	....	....	....	....	1.09	....	....	.99	1.08	1.08	.97	....	....	.99
34-34.9	....	....	....	....	....	1.12	....	....	1.01	....	1.11	.99	....	....	1.01
35-35.9	....	....	....	....	....	1.15	....	....	1.03	....	....	1.01	....	....	1.03
36-36.9	....	....	....	....	....	1.18	....	....	1.06	....	....	....	....	....	1.06
37-37.9	....	....	....	....	....	1.21	....	....	1.09	....	....	....	....	....	1.09
38-38.9	....	....	....	....	....	1.24	....	....	1.12	....	....	....	....	....	1.12
39-39.9	....	....	....	....	....	1.27	....	....	1.15	....	....	....	....	....	1.15
40-40.9	....	....	....	....	....	1.30	....	....	....	....	....	....	....	....	....
41-41.9	....	....	....	....	....	1.33	....	....	....	....	....	....	....	....	....
42-42.9	....	....	....	....	....	1.36	....	....	....	....	....	....	....	....	....

*Union Oil Co. also purchases Long Beach Crude and is maintaining the same gravity and price schedule in that field as the Standard maintains in Signal Hill and Huntington Beach fields. The Union also buys and pays the same prices as the Standard in the Rosecrans-Dominguez fields, on gravities ranging from 14 degrees to and including 24.9 degrees and in Santa Fe Springs, on gravities ranging from 20 to and including 23.9 degrees.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders as effective the date shown.

Refiners' Supplies

	Aug. 13	Aug. 6
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.65	$1.65
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums, cwt.	$0.70-0.75	$0.70-0.75
Sal Soda wks.	$0.90	$0.90
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of, cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks., lb.	3.50-5.00	3.50-5.00
Litharge, powdered, casks, cwt.	8.75	8.75

Compounders' Supplies

Vegetable Oils

Linseed carloads, spot, lb.	9.50	9.90
Tanks, spot	8.70	9.10
Soya Bean, Tanks, coast, lb.	9.50-9.75	9.50–9.75

Oleic Acid

Distilled, tanks, lb.	9.00	9.00
Distilled, bbls., lb.	9.75	9.75
Saponified, tanks, lb.	9.25	9.25
Saponified, bbls., lb.	10.00	10.00

Lard Oils

Prime Winter Strained, lb.	16.25	16.25
Extra Winter Strained, lb.	13.00	13.00
Extra, lb.	12.50	12.50
Extra No. 1, lb.	12.25	12.25
No. 1, lb.	11.50	11.50
No. 2, lb.	10.75	10.75
Tallow oil, lb.	11.375	11.375

Neatsfoot Oil

Pure, bbls., lb.	15.25	15.25
Extra, bbls., lb.	12.50	12.50
No. 1 bbls., lb.	11.75	11.75
Cold Pressed, lb.	18.50	18.50

Fish Oils

Menhaden Oil		
Light Pressed, gal.	60-61	62-64
Light Pressed, tank cars, N. Y., gal.	54-56	54-56
White bleached, gal.	65	68-70
Yellow bleached, gal.	66-68	66-68
Whale, extra winter bleached, gal.	82	82

Naval Stores

Steam distilled turpentine, N. Y., gal.	52	52
Steam distilled turpentine, Savannah, gal.	47	47
Gum turpentine, N. Y., gal.	54.50	54
Gum turpentine, f.o.b. cars Savannah, gal.	47.75	50
Wood Rosin F, N. Y., bbl.	$8.30	$8.30
Wood Rosin F, Savn'h., bbl.	$7.50	$7.50
Gum Rosin B, N. Y., bbl.	$8.90	$8.95
Gum Rosin B, f.o.b. cars Savannah, bbl.	$8.15	$8.20
Rosin oil, pure, gal.	57	57
Rosin oil, compounded, gal.	47	47

Pine Tar

Kiln burnt, bbl.	$12.50-14.00	$12.50-14.00
Retort, bbl.	$13.50-15.50	$13.50-15.50

Alcohol

Denatured, Formula 5, in bbls., per gal.	53-58	52-56

*Nominal.

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August Promises to be Month Of Strong Gasoline Prices

Staff Special
NEW YORK, Aug. 11

ADVANCING gasoline prices again held sway in Atlantic seaboard tank car markets. U. S. Motor at 11.75 cents at New York harbor, following this week's 0.5-cent advance, now stands 4 cents higher than at the beginning of the year and nearly that much over the price prevailing a year ago. Everywhere there is feeling of optimism, partly because of the higher prices, but largely because of the reversal of oil industry history now being experienced.

August of many former years, the month of greatest consumption, has almost invariably been one of falling gasoline markets or at least the crisis has come during this period. August 1928 gives fair promise of being decidedly different and the trend of prices thus far in the month has not fallen short of expectations. If the predictions made in some well informed oil circles are realized, buyers in New York harbor will be confronted with a 13-cent tank car market before the upward curve in prices changes its course. Many an oil man is known to have erred in his predictions, but this year he has been right many more times than he has been wrong.

"To attain a 13-cent tank car market," one large seller in the New York market said this week, "another advance in tank wagon would have to be forthcoming. Many of the trade feel there is little likelihood of this, but they said the same thing about an 11-cent tank car market three weeks ago."

Situations which might act as hitches in a program as suggested in the foregoing paragraph are few, but these loom up rather large. Cut prices at service stations are in effect in two large consuming districts in the east—Boston and Norfolk, Va. In the former city at least three large Independent operators are posting 19 cents at their stations against 20 cents posted by Standard of New York, Atlantic, Texas Co., Gulf, and others. This week's advance of 0.5-cent in the tank car market is expected to clear up this situation, but according to well informed sources there is little hope for abandonment of the price war in Norfolk for some time to come.

Current spot buying has been confined largely to stragglers who failed to cover the latter part of July on their requirements for the first 15 days of August. One or two resale agents early in the week reported a few more than the ordinary run of spot sales following the excellent motoring weather of last weekend. The majority of these sales were on the basis of 11.25 cents f.o.b. New York harbor. The same sources reported snagging an occasional customer or so at 11.50 cents just prior to the general advance to 11.75 cents on Thursday.

There have been a few buyers in the market since the 0.5-cent boost and scattered sales have been reported. The real effect of the 11.75-cent market won't be felt for several days yet, however, when buyers begin covering for the last half of the month.

Sellers in all districts except Philadelphia were unanimous in advancing their prices. Two important factors in this market said they were skeptical about the advisability of advancing prices at this time, and maintained their 11.25-cent quotations for both U. S. Motor and California goods. By the end of the week, however, one had placed his prices on a parity with the majority, and the other had raised his quotations 0.25-cent, at the same time stating there was a probability of his going to 11.75 cents early next week.

In the Boston and Providence districts U. S. Motor was placed on a 13.50-cent delivered basis. With posted tank wagon at 18 cents and 2-cent concessions still being made, jobbers in these sections again are complaining about narrow margins.

Three large sellers of California gasoline at New York harbor advanced quotations 0.75-cent, again placing a premium on this grade over U. S. Motor. One seller with a considerable quantity of goods for sale, however, asserted he was willing to take 11.75 cents.

One large refiner who has been quoting water white kerosene at 7.50 cents at Baltimore and New York harbor, advanced his prices 0.25-cent Saturday. A slightly better demand was noted for this commodity, although generally speaking the trade reported the seasonal dullness in this section of the market in the east continued.

Burning oils were quiet and prices were down 0.25-cent in New England. Refiners here reported large surpluses of gas oil which they were willing to dispose of at 4.75 cents in tank cars. Furnace oil was offered at 6 cents against a minimum of 6.25 cents a week ago.

Foreign Buyers Come Through With Good Orders at Gulf

Staff Special
NEW YORK, Aug. 11

FOREIGN buyers came through with some good-sized purchases at the Gulf this week. Transactions involving nearly 250,000 barrels of gasoline and kerosene were reported closed, in some instances establishing new high prices for the move. Several inquiries were pending at the close of the week.

Activity was not confined to the light oil division of the market alone. A large contract for fuel oil was placed with a leading refiner and more inquiries for spot cargoes of fuel oil were said to be in the market than any week this year. The call for gas oil also was better.

Numerous factors tended to make the market one of the most interesting from the bull standpoint in a good while. Most of the buying reported was done quietly. Inquiries were not as widely broadcast as has usually been the case. This indicated to the trade that buyers were not proud of their recent attitude in the market, especially in view of the fact that the penalty for their reluctance about buying has been higher prices in almost every instance.

The limited number of suppliers in a position to offer on the various inquiries as they came in the market was pointed out as another encouraging factor. In the instances of one or two mixed light oil cargoes, the reason for the small number of bidders was due to a temporary shortage of one particular commodity, but in most instances it was a case of "nothing to offer" or "not interested at the present time."

And then there was widespread talk of another advance in "sweet" crudes. the probability of which several well informed sources said they had on good authority. The step, they asserted, would be taken as a means of satisfying the small producers in certain fields who at the present time are objecting strenuously to the extension of curtailment agreements.

If it was nothing more than gossip, sentiment as expressed in the foregoing paragraphs served to keep the enthusiasm of the trade at a high pitch. Optimism continued the predominating element.

The inquiry from a French buyer, subsidiary of a leading U. S. refiner, for approximately 75,000 barrels of 61-63, 390 end point and 64-66, 375 end point gasoline and prime white kerosene, held over from last week, was closed on Tuesday. The present company closed the deal but was forced to meet the competition of an independent supplier who offered at 11.375 cents, 11.875 cents, and 6.25 cents, respectively, for the three grades. The cargo is scheduled for lifting the latter part of next month.

French buyers took two more cargoes but were unsuccessful in obtaining prices as low as the foregoing. One cargo consisting of approximately 55,000 barrels of 64-66, 375 end point gasoline, prime white and water white kerosene was closed at 12 cents, 6.25 cents, and 7.50 cents, respectively. Shipment is to be made sometime between Sept. 20 and Oct. 20 for the account of the largest independent buyer in the French market. The second cargo aforementioned consisted of 65,000 barrels of 64-66, 375 end point gasoline only which sold at 12.125 cents. This oil is to be lifted late in September.

English and Scandinavian buyers also were active in the market. At least one large cargo of 64-66, 375 end point gasoline was sold for September shipment to the United Kingdom and other inquiries from this country were under negotiation at the close of the week.

A Scandinavian buyer entered the market Friday for 65,000 to 75,000 barrels of U. S. Motor, 61-63, 390 end point and 64-66, 375 end point gasoline for Sept.-Oct. loading. The same buyer also was seeking a mixed cargo of gas oil and kerosene.

Interest in the heavy oil market, which has been practically nil since the placing of the Shipping Board contracts, was revived with the closing of a large fuel oil contract by the Southern Pacific Railroad. The company purchased 1,000,000 barrels of fuel oil, around 16 gravity, from a leading refiner at $0.70 a barrel, f.o.b. refinery for delivery to New Orleans and Galveston. It was reported there were four other bidders for the contract at the same price.

At least three definite inquiries for fuel oil were received from foreign buyers specifying approximately 65,000 barrels each. Bids for the business generally were around $0.70 although one buyer reported receiving a firm offer at $0.68 a barrel.

Grade C for bunkering purposes was unchanged at $0.85 to $0.95 a barrel.

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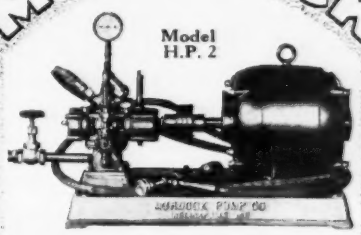

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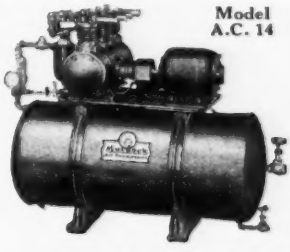

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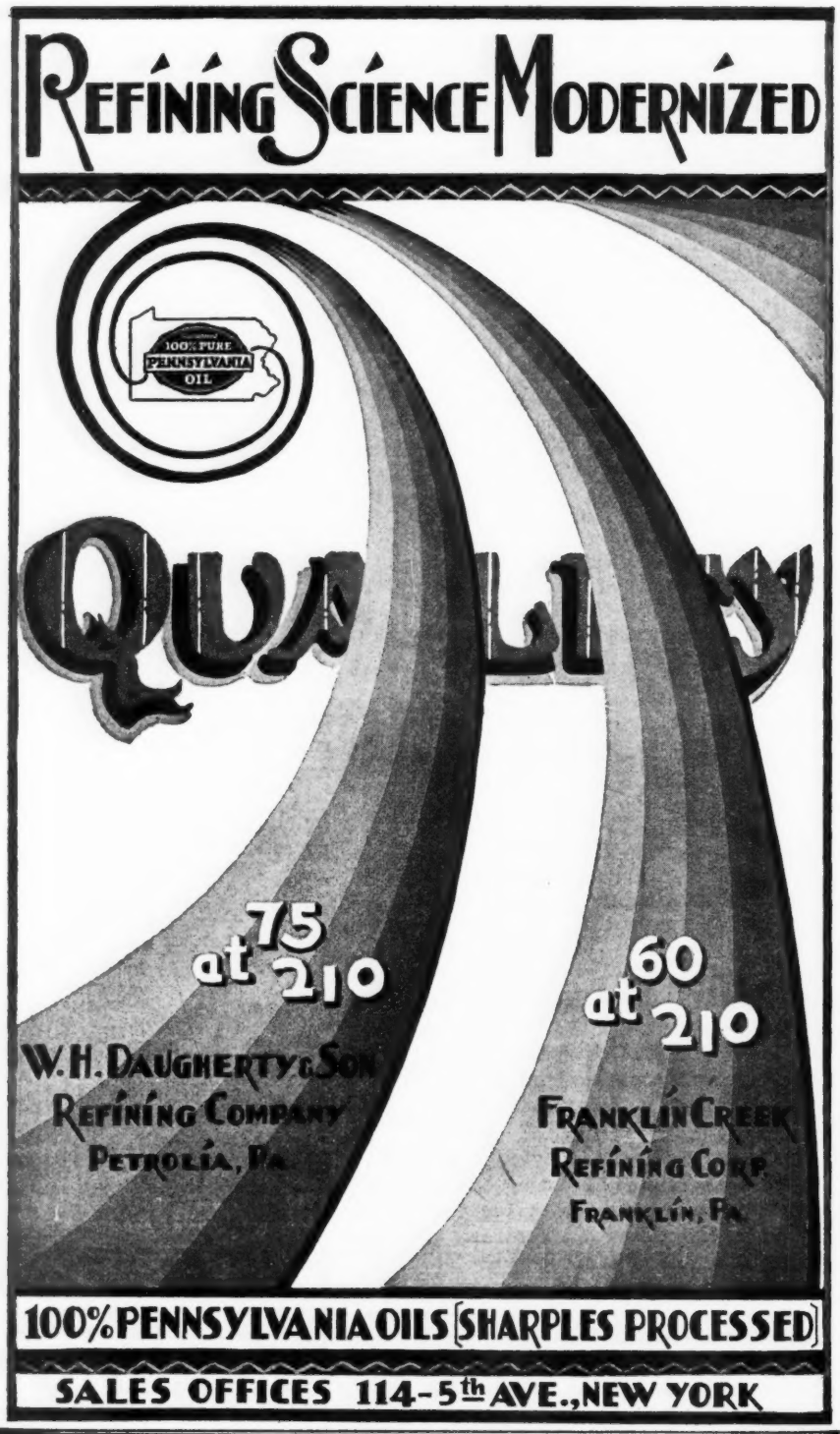
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Kerosene Active In Chicago

CHICAGO, Aug. 11

KEROSENE has been the most spectacular performer in the Chicago resale market during the week ending Aug. 11. The attention of the trade was concentrated on kerosene Aug. 1 when Standard Oil Co. of Indiana unexpectedly marked up the tank wagon price of "Perfection Oil" along with Red Crown gasoline. The gasoline price advance had been expected momentarily.

The price of refined oils rallied shortly after the tank wagon price boost and has been climbing ever since. On Aug. 6, kerosene of 41-43 gravity could be bought for 5.50 cents in some quarters and by Aug. 11 actual sales were recorded at 6 cents and there was no indication of a price recession. In Oklahoma, refiners were buying kerosene of other refiners, bidding up the price to get enough material to take care of their own commitments.

Competitive grades of gasoline did almost as much climbing as kerosene. U. S. Motor gasoline of 58-60 gravity moved from a low of 9.50 cents to a high of 9.75 during the business days of the week and some refiners stated definitely on Saturday that they would be quoting higher on Monday. Gasoline with a 60-62 gravity and a "navy end" went up in sympathy with U. S. Motor goods and 400 end point products advanced 0.25 cent in price.

In spite of high quotations on light gravity gasolines, the demand for them was unusually light. The big call from the jobbing trade was for U. S. Motor. Jobbers' margins are narrow and many of them in Standard Oil Co. of Indiana territory are beset by cut price competition from operators of "railroad filling stations" and others protected by the sheltering wing of the Q.D.A.

For this reason jobbers are nearly all "bears." They want a good product for their trade at the lowest price they can find.

Offsetting the weak demand for premium priced gasolines to sell at competitive prices, there developed a demand during the week for motor fuel inferior to U. S. Motor grade. At least two refiners began offering some 56-58, 450 e.p. gasoline and found plenty of takers at 0.25 to 0.375 cent below the going price of U. S. Motor. These refiners said the jobbers who bought it were not attempting to sell it straight but pumping it to storage with other gasolines and vending the mixture.

Along with the flurry in the kerosene market and the consistent strength of motor fuels, a slight upturn was observed in the market for crackable distillates on Aug. 8. The

price advances were fractional and reflected an indisposition of refiners to sell rather than a buying demand. Other heavy products moved slowly.

Treated crude fuels from west Texas refineries have become a factor in the northern market now. However, the market is not stabilized and a great deal of barter and banter contributes to a wide range of prices. Sulfur content is the main point of argument because a great many car load marketers in Chicago hold certain industrial accounts by knowing their exact fuel requirements and some of them cannot use fuel with as much sulfur as west Texas oil contains.

The natural tendency is to play the west Texas supply against the Mid-Continent refiner and get Oklahoma oil at a Texas price, or as nearly so as possible. Early in the week there was a range of 10 cents or more on 18-22 fuel oil which narrowed from both ends before the week closed. But with the downward turn of heavy Oklahoma refinery fuel, the lighter fuels sank fractionally in price through sympathy.

The weather throughout Standard Oil Co. of Indiana territory for the coming week promises to be favorable for motoring. The Chicago weather bureau predicts slightly cooler temperatures and fair, except for scattered thunder showers. Only in the region of the Great Lakes may temperatures above normal be expected, and that only in the early days of the week.

Eastern Kentucky Refinery Market

ASHLAND, Aug. 13.—Prices in eastern Kentucky refinery markets for Aug. 13 are:

58-60	U. S. Motor gasoline	12.25
60-62	gasoline	12.50
64-66	gasoline	13.00
68-70	gasoline	13.25
41-43	kerosene	6.75
32-36	gas oil	4.50
24-26	fuel oil	none available

NEW YORK, Aug. 10.—T. J. Skidmore, assistant manager of wholesale marketing of the Tide Water Oil Co. is enjoying a two months' leave of absence. Mr. Skidmore has been with Tidewater 42 years. His health since the first of the year has suffered, and he is taking this opportunity to recuperate at Berkhaven, in the White Mountain region of New Hampshire.

LOS ANGELES, Aug. 10.—Union Oil Co. of California is to start work as soon as possible on its 25,000 acre lease south of the Tuxpan River about 100 miles southwest from Tampico, Mexico. H. R. Scheffler, who will act as drilling foreman, and John T. Savage, driller, have already left Los Angeles for Mexico.

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Transactions in Oil Shares on New York Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Aug. 11 Sales	First	High	Low	Last	Change
37⅞	27⅝	38	27⅛	(sh) 922,075	N.P.	Amerada Corp	50cQ	July 31, 28	6,700	32	32⅜	30⅜	30⅝	— 1⅝
82½	35⅛	85	51¼	(sh) 209,180	N.P.	American Republics Corp	....	.....	22,400	63½	71	63	64¼	+ 1½
50¼	35	46⅞	37½	$56,000,000	$ 25	Associated Oil	50cQ	June 30, 28	140	47½	48	46⅜	48	+ 3¼
131⅜	104	169½	95¾	50,000,000	100	Atlantic Refining	$1Q	June 15, 28	65,400	159¾	161½	153⅛	153¾	— 5⅜
119	115½	118¼	115	20,000,000	100	do pfd	$1.75Q	Aug. 1, 28	.....	.....	.....	.....	.....	.....
35⅛	20⅜	26⅝	20⅛	28,725,675	25	Barnsdall Corp. A	....	Feb. 6, 28	26,000	24⅛	25½	24⅛	24⅜	+ ⅛
32½	20½	27¼	22	799,775	25	do B	....	Feb. 6, 28	.....	....	....	....	....	.....
18¼	14	20¼	12¼	945,888	N.P.	Beacon Oil	.....	.....	.....	.....	.....	.....	.....	.....
32⅞	20	32¾	24	51,524,150	25	California Petroleum	25cQ	July 2, 28	1,100	32	32	29¾	29¾	— 1⅞
96¾	65	94⅞	70	20,785,400	100	General Asphalt	.....	.....	16,700	74⅝	77½	70⅝	73	— 1
144⅞	107¼	141½	111	6,792,200	100	do pfd	$1.25Q	June 1, 28	300	118	118	115	115	0
175¾	60⅛	167	127	25,000,000	100	Houston Oil	....	.....	17,100	140	142	133	140	+ 2⅜
32¾	17⅝	31⅞	21¾	(sh) 500,000	N.P.	Independent Oil & Gas	25cQ	July 31, 28	24,600	25¼	26⅞	25	26¾	+ 1¼
12⅛	7⅝	39⅝	9	$3,280,340	$10	Indian Refining	....	Dec. 15, 20	50,000	34⅞	35⅝	31¼	32⅞	— 1⅞
12	7¼	37¼	8½	4,550,110	10	do ctfs	.....	.....	18,100	32⅜	32⅜	28⅛	29	— 2⅛
P12	99	238	101	2,296,400	100	do pfd	.....	Dec. 15, 21	500	241	241	220	230	—18
37¾	20½	39⅛	27⅜	(sh) 3,992,122	N.P.	Lago Oil & Transport	75cQ	May 1, 28	2,000	33½	33⅞	31½	31½	— ⅛
18⅛	10	19¾	9⅜	(sh) 1,237,078	N.P.	Louisiana Oil Refining	.....	.....	18,300	14⅝	15⅜	14¼	14¼	— ⅛
97	85¼	101	78	$4,000,000	$100	do pfd	$1⅝Q	Aug. 15, 28	10	90	90	90	90	— ⅜
22¾	12	25½	12½	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	5,200	17¾	17¾	16⅝	16⅝	— 1⅛
58½	31	44½	33	(sh) 2,316,692	N.P.	Marland Oil Co	....	Mar. 31, 27	27,800	38½	39½	36	36⅜	— 2
320	200	360	250	$45,942,800	$100	Mexican Petroleum	$3Q	July 20, 28	.....	....	....	....	....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	July 20, 28	.....	....	....	....	....	.....
9¼	3	39	4⅜	(sh) 945,939	N.P.	Mexican Seaboard	....	Nov. 15, 24	17,770	28½	31½	27¾	29⅜	+ 1
39⅜	25½	33¼	25⅛	(sh) 1,357,461	N.P.	Mid-Continent Petroleum	.....	Aug. 1, 27	14,200	31	31¼	30	30	— 1
105	97	115⅛	103¼	$6,718,000	$100	do pfd	$1.75Q	June 1, 28	100	112½	112½	112½	112½	+ 1
3¾	1⅝	7⅜	2⅜	24,298,850	10	Middle States	....	July 1, 23	8,200	4½	4⅞	4½	4½	— ⅛
2⅜	1⅛	5⅞	1½	5,501,370	10	do ctfs	....	.....	3,200	3½	3⅜	3½	3⅛	— ⅛
1⅞	1	2¼	1¼	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	3,200	1⅜	1⅜	1¼	1⅜	+ ⅛
65⅞	40⅛	53¾	38¼	$48,807,400	$ 50	Pan American P. & T	....	Oct. 20, 27	2,200	43	43	40⅝	40⅝	— 2⅜
66⅜	40¾	54⅝	37¾	121,097,900	50	do B	....	Oct. 20, 27	13,600	44	44⅞	42⅝	42⅝	— 1⅛
37⅞	16¾	28⅜	15½	(sh) 400,000	N.P.	Pan American Western B	....	Jan. 30, 27	6,400	16½	17¾	16½	16⅞	+ ⅛
18⅞	8	21⅜	11½	(sh) 198,770	N.P.	Panhandle P. & R	....	.....	1,000	15½	15⅞	14⅝	14⅝	— 1⅛
83	54	106¼	70	$2,935,200	$100	do pfd	.....	July 2, 23	200	86	86	85½	85½	— 4½
60¼	36¼	44⅝	35¼	(sh) 2,406,796	N.P.	Phillips Petroleum	37½cQ	July 2, 28	19,300	40¼	41	38⅞	39	— 1⅝
1⅛	½	4¼	½	$29,622,925	$ 25	Pierce Oil Corp	....	.....	6,200	2½	2⅝	2¼	2¼	— ⅛
24	13½	30½	16¼	15,000,000	100	do pfd	....	Feb. 1, 22	.....	....	....	....	....	.....
5½	2½	6⅝	3½	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	7,200	4½	4⅝	4	4¼	— ⅛
33⅞	16¾	26⅞	16	$37,450,850	$50	Producers & Refiners	....	Sept. 15, 23	4,300	25¾	25	24	24	— 1½
50	36⅜	46⅞	41	2,845,350	50	do pfd	.....	May 1, 25	.....	....	....	....	....	.....
33½	25	27½	19	75,959,250	25	Pure Oil Co	12½cQ	June 1, 28	22,700	23½	24¾	22⅞	22⅞	— ⅜
115½	111⅜	115	108	13,000,000	100	do 8% pfd	$2Q	July 2, 28	130	112½	113	112½	112½	0
28⅝	25⅜	50¾	24	$29,224,894	$25	Richfield Oil	‡25cQ	Aug. 15, 28	51,000	48¼	48½	45½	46	— 1
54½	44¼	56¾	44⅝	(sh) 611,303	13.40	Royal Dutch, N. Y. shares	$1.879	Aug. 3. 28	7,600	54⅞	56	54¼	55⅜	+ 1⅛
47⅞	41⅜	51	40⅝	(sh) 77,590	L2	Shell Transport & T	$1.455	July 23, 28	200	48¾	48¾	48¾	48¾	+ ⅜
31¾	24⅜	31	23¼	(sh) 10,000,000	N.P.	Shell Union Oil	35cQ	June 30, 28	8,600	26¾	27⅛	26	26	— ⅛
26⅜	14¼	24¾	18⅛	$7,208,080	$ 10	Simms Petroleum	....	Apr. 1, 27	2,600	20¾	21½	20⅝	20⅝	— ⅛
22⅜	15	30¼	17⅜	(sh) 4,501,915	N.P.	Sinclair Consolidated	....	May 31, 24	237,600	27⅞	29½	26⅜	27	— ⅛
104½	97	109½	102½	$16,604,600	$100	do pfd	$2Q	Aug. 15, 28	100	107	107	107	107	+ ½
37⅜	24½	34	25	27,396,590	25	Skelly Oil Co	50cQ	June 15, 28	9,300	32¼	32¾	31¼	31½	— ⅝
60¾	50⅜	63⅞	53	(sh) 13,016,434	N.P.	S. O. California	62½cQ	June 15, 28	14,800	58½	59⅜	57½	57⅝	— ⅜
41⅜	35⅛	49	37¾	$607,910,525	$ 25	S. O. New Jersey	‡25cQ	June 15, 28	77,600	45⅜	46¾	44¼	44⅞	— ⅜
34⅛	29¾	41½	28¾	427,973,275	25	S. O. New York	40cQ	June 15, 28	16,690	35⅝	37½	35⅛	35¼	— ⅛
34⅞	30	49	31½	(sh) 1,206,073	N.P.	Sun Oil	25cQ	June 15, 28	4,200	49⅞	50⅛	46⅞	47⅜	— 2⅛
101⅝	99	109½	100	$5,000,000	$100	do pfd	$1.50Q	June 1, 28	100	106	106	106	106	0
6¼	3⅛	9½	2½	(sh) 1,121,368	N.P.	Superior Oil Corp	.....	Dec. 20, 20	22,700	7	7¼	6	6	— 1
58	45	66⅝	50	$180,480,550	$ 25	The Texas Corp	75cQ	July 2, 28	67,700	63¼	64½	60¼	61	— 2⅜
18⅞	12	17½	12½	8,380,340	10	Texas Pacific Coal & Oil	.....	Jan. 3, 28	17,200	14⅝	14⅞	13⅞	13⅞	— ⅞
29⅛	19	27⅛	19⅜	(sh) 2,168,410	N.P.	Tide Water Oil Co	20cQ	June 30, 28	5,900	25¼	27⅜	25¼	26⅞	+ 1⅜
90½	85	94½	87	$20,705,200	$100	do 5½% pfd	$1.25Q	Aug. 15, 28	100	88	88	88	88	+ 1½
19½	15¾	20⅝	14¾	(sh) 4,796,158	N.P.	Tide Water Associated	.....	Aug. 1, 27	19,800	19	19	18⅛	18⅛	— ⅞
90¾	85	90	82⅜	$72,745,900	$100	do pfd	$1.50Q	July 2, 28	2,100	87	89	87	89	+ 2½
10⅜	3¾	10⅛	7	(sh) 3,742,029	N.P.	Transcontinental Oil	.....	.....	25,900	8⅛	8¼	7¾	7⅞	— ⅛
56½	39⅜	57	42¾	$40,791,225	$ 25	Union Oil of California	50cQ	Aug. 10, 28	3,900	51¾	52⅜	50¼	50¼	— 2
127½	94	128⅛	115½	30,844,000	100	Union Tank Car Co	$1.25Q	June 1, 28	.....	....	....	....	....	.....
34½	24½	38⅜	26	(sh) 310,956	N.P.	Warner Quinlan	50cQ	July 2, 28	8,500	38½	38¾	36¾	36¾	— 1⅝
27½	20	26⅝	20⅛	(sh) 490,000	N.P.	White Eagle Oil & Refining	25cQ	July 20, 28	2,500	25⅞	25⅞	24½	25½	— ⅛

*New High †New Low ‡Also extras s-Stock Total Sales 1,038,940

Pittsburgh Stock Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Aug. 10 Sales	First	High	Low	Last	Change
....	....	4	2½	N.P.	Ark. Nat. Gas (new)	2,690	2¾	2¾	2⅝	....	— ⅛
....	....	7½	6¾	N.P.	do pfd	2,855	7⅜	7⅜	7⅛	7¼	0
98⅝	80⅞	114½	90¾	100	Columbia Gas	550	115	*115	115	115	0
107⅜	100	108½	107	100	do pfd	46	107	107	†107	107	0
15	7½	10	7	10	Devonian Oil	.....	.....	.....	.....	.....	.....
....	....	15	9¾	10	Dixie Gas & Util	.....	.....	.....	.....	.....	.....
....	....	95	85	100	do pfd	.....	.....	.....	.....	.....	.....
117½	115	116	115	100	Duquesne Light pfd	.....	.....	.....	.....	.....	.....
....	....	85	80½	100	Fayette County Gas	.....	.....	.....	.....	.....	.....
12½	6	22	12	N.P.	Houston Gulf Gas	.....	.....	.....	.....	.....	.....
59¼	37¼	58	48⅝	$ 25	Lone Star Gas	1,831	52¼	52¼	51⅝	52¼	0
....	....	36½	36	25	Petroleum Exploration	.....	.....	.....	.....	.....	.....
3⅛	3	4	3¼	5	Pittsburgh Oil & Gas	45	3¼	3¼	3¼	3¼	0
8	5½	7¼	6	10	Salt Creek Cons	250	6	6¼	6	6¼	+ ⅛
26½	17	22	16¾	10	Tidal Osage	.....	.....	.....	.....	.....	.....
43	33	33⅝	30½	N.P.	Waverly Oil Wks. A	.....	.....	.....	.....	.....	.....
....	....	19	17½	$ 25	Wiser Oil	.....	.....	.....	.....	.....	.....

*New high record †New low.

Pittsburgh Curb Exchange

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Aug. 10 Sales	First	High	Low	Last	Change
....	....	10¼	9	10	Ark. Nat. Gas (old)	.....	.....	.....	.....	.....	.....
95	88	132	120	25	Gulf Oil	.....	.....	.....	.....	.....	.....
....	....	115	115	....	Houston Gulf Gas pfd	.....	.....	.....	.....	.....	.....
10¾	5½	9	5½	25	Leonard Oil & Dev	2,300	6½	6½	6½	6½	— 1½
2.70	.30	1.00	.50	10	Omar Oil & Gas	.....	.....	.....	.....	.....	.....
....	....	.40	.20	....	Phoenix Oil	.....	.....	.....	.....	.....	.....
2¼	1¼	....	....	5	Pittsburgh Oil Dev	.....	.....	.....	.....	.....	.....
31	19	22	16¾	5	Plymouth Oil	1,440	18½	19¾	18½	19¾	+ 1¾
6	5	4¾	4	5	States Oil	.....	.....	.....	.....	.....	.....
3⅜	1½	4½	2¼	1	Texon Oil & Land	.....	.....	.....	.....	.....	.....
23¾	18	18	15	10	Tidal Osage Non-vgt.	.....	.....	.....	.....	.....	.....

*New High †New Low x Ex Dividend

Cleveland Stock Market

August 10	Par Value	Bid	Asked	Last Sale
Canfield	100	110	...	115
do pfd	100	101	...	101
Fred G. Clark	10	7	8	7
National Refining	25	34⅜	36	36
do pfd	100	131	135	131
Paragon Refining Co	25	16⅜	16⅝	16¼
do pfd	100	115	125	125
do ct'fs of dep	...	16	17	16

LOS ANGELES, Aug. 10.—Richfield Oil Co. has purchased the northeast corner of 6th and Flower Streets, Los Angeles, and announces that a limit height office building will be erected as home for the company. The site has a frontage of 121 feet on 6th Street and 175 feet on Flower. It is understood that Richfield plans to use eight floors of the building and will rent four.

It cost $10 in gold to send a half ounce letter by pony express in 1860 across the continent, or exactly 100 times what it costs to post an air mail letter today.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

ACCOUNTING AND FINANCIAL EXECUTIVE American, 40, married, tactful, industrious, best of references, possesses initiative and ability. Seven years experience as vice president, secretary-treasurer and comptroller of oil companies. Eight years experience with one of the leading certified public accounting concerns. Capable of providing management with complete accounting and as budgetry control of corporation's activities. Address Box 149.

DESIRES NEW CONNECTION AS SUPERINTENDENT OR MANAGER. Young married man 39 years of age, college graduate, at present employed, twelve years experience with all modern refining methods—continuous, high pressure, and vacuum distillation, batch and continuous treating. Familiar with manufacturing and selling of all industrial oils and greases. Address Box 140.

Situations Open

SALESMEN

High Class man to establish lubricating oil department for marketer. Man with following in middle west can command good drawing account and commission. Write fully.

Also desire experienced gasoline salesmen for middle west.

Address Box 154

TWO DRAFTSMEN WANTED

Experienced in oil refinery work, familiar with pipe still and pressure still designing. Steady employment to the right party. Give full information, including experience, education and salary desired, and recent photograph with application.

Address Box 151

WANT SALESMEN

Calling on oil trade in all territories who are well acquainted with the large gas and oil concerns, to sell the Norman H. Landman cushion and other successful coupon propositions as side line.

Address Norman H. Landman,
538 N. Erie St., Room 204, Toledo, Ohio.

LUBRICATION SALES-ENGINEER WANTED

Experience in application of petroleum products, to industrial uses and all types of machinery; for cooperative work with Sales Dept. in Pennsylvania, Southern New Jersey, Maryland area. Only man with broad previous experience considered. Give complete details of education and experience.

Address Box 141

Business Opportunities

REFINERY CONNECTION WANTED

Chemist with several years refinery experience would like to make arrangements with refinery or individual for development of vapor phase process for treating gasoline. The resulting product passes Doctor, corrosion, gum, color, odor and light stability tests.

Address Box 136

GAS JOBBER WANTS REFINERY CONNECTION for 1929. Has outlets for 5 million gallons gasoline. Good reliable account. Address Box 150.

A distributor of nationally known petroleum products in the city of Detroit for the past five years desires a live, wide-awake partner who will invest not less than $6,000 and will take complete charge of sales end of business. This is a proposition well worth investigating.

Address Box 148

PETROLEUM PRODUCTS BOUGHT ON COMMISSION

Make this office your Tulsa buying office on a commission basis.

Let's Exchange References

DALE W. MOORE

532-533 Mayo Bldg., Tulsa, Okla
Telephones: 3-4177 and 3-4178
L. D. 136

GASOLINE BULK PLANT FOR SALE

Located in southern Indiana. In 1927, this business sold 359,484 gal. gasoline; 100,000 gal. kerosene; besides oils, greases and alcohol. During the first five months of 1928 this business sold 176,154 gal. gasoline; 54,010 gal. kerosene, besides oils and greases. Are distributors for highly-advertised product, on long margin of profit. Also has 3-pump modern retail station in center of town on state highway; also has 25 gasoline pumps outstanding. Storage for 75,000 gal. gasoline and kerosene. Plant is completely equipped to do a wholesale and retail business. Very good reasons for selling. Can be bought with very reasonable down payment; liberal terms and long-time payments on balance of sale price. Address

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NATIONAL PETROLEUM NEWS

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Professional

L. G. Huntley **J. R. Wylie, Jr.**
Shirley L. Mason

HUNTLEY & HUNTLEY
PETROLEUM GEOLOGISTS AND ENGINEERS

Frick Building **PITTSBURGH, PA.**

For Sale

THREE BULK STORAGES FOR SALE in Missouri and Illinois doing 160,000 gallons monthly, net profits $15,000 per year. Business increased 50% last year. $45,000 will handle. Address Box 152.

Equipment Wanted

AM INTERESTED IN PURCHASING quickly several hundred fifty-five gallon seamless steel bilged shell I. C. C. shipping drums in first class condition. Address Box 155.

Turn Your Outgrown Equipment Into Money

Some of our 16,000 readers are in the market for it right now.

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Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Standard Oil Stocks on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Aug. 11 Sales	First	High	Low	Last	Change
21⅜	17⅞	22⅜	17	£ 4,126,460	£ 1	Anglo-American Oil	24.4c	June 6, 28	800	18	18	17¾	17¾	— ½
21½	17⅜	20½	16⅜	.....	£ 1	do cts. non-voting	.....	.....	.....	.....	.....	.....	.....	.....
3⅜	¾	5	1¼	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	300	2½	2⅝	2½	2½	0
6⅛	2⅜	9¾	3¼	$ 10.000,000	$ 50	do pfd	.....	.....	.....	.....	.....	.....	.....	.....
69	50	56	49	1,000,000	25	Borne Scrymser	‡$1S.A.	Apr. 16, 28	350	50½	53	50½	53	+ 5
60	45	76	58	10,000,000	50	Buckeye Pipe Line	‡$1Q	June 15, 28	100	62⅛	62⅛	62⅛	62⅛	+ ⅛
126	76½	161	117¼	3,000,000	25	Chesebrough Mfg	$1Q	June 30, 28	100	145	146	145	145	— 5
22⅝	16¼	23	16	36,123,350	10	Continental Oil	.....	Dec. 15, 27	6,800	17½	18¼	16¾	16¾	— 1¼
137	89	114	88	3,000,000	100	Cumberland Pipe Line	‡$2Q	June 15, 28	300	104	104	96	97¼	— 6¼
68⅛	47	88	64⅜	5,000,000	100	Eureka Pipe Line	$1Q	Aug. 1, 28	50	70	70	70	70	— 6
13½	3⅛	13	5	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	10	9½	9½	9½	— 1⅝
59¾	23	87¾	27	4,000,000	100	do new pfd	.....	June 30, 26	120	77	80	75	75	— 5
60⅛	35⅜	89¾	35	2,000,000	100	do old pfd	.....	June 30, 26	70	78	80	78	79½	— ½
68⅛	54	84⅞	60	73,685,700	25	Humble Oil & Refining	‡$30cQ	July 1, 28	13,700	81	*84⅞	79½	80	— 2¾
182	123¾	245	176½	20,000,000	100	Illinois Pipe Line	$6S.A.	June 15, 28	200	207½	207½	207	207⅜	+ ⅛
64¾	37¾	71⅞	56¾	(sh) 6,458,267	N.P.	Imperial of Canada	‡25cQ	June 1, 28	3,600	68¾	67½	65¼	66	— 2
94½	61	89½	74⅞	$5,000,000	$ 50	Indiana Pipe Line	‡$1Q	Aug. 15, 28	.....	.....	.....	.....	.....	.....
39	28⅛	45¼	35	(sh) 7,123,544	N.P	International Petroleum	25c	June 30, 28	13,500	39	39¼	37½	37½	— 1¾
24	13¼	32⅛	19⅜	$6,363,350	12.50	National Transit Co	‡25cQ	June 15, 28	1,600	21¼	22¼	21	21¾	+ ¼
44⅛	31¼	59⅛	37⅛	5,000,000	100	New York Transit	.....	July 15, 26	.....	.....	.....	.....	.....	.....
100	70	125	94	4,000,000	100	Northern Pipe Line	$3S.A.	July 2, 28	50	110½	110½	110½	110½	— ½
67⅞	52	68¼	58	60,000,000	25	Ohio Oil Co	‡50cQ	June 15, 28	700	64⅜	64⅝	63⅛	63⅛	— 1⅝
39	12	84	28	10,000,000	25	Penn Mex. Fuel	$1.25	May 31, 28	400	39½	40	39⅛	39⅛	— 1⅜
55⅛	45⅝	56	47¼	60,479,600	25	Prairie Oil & Gas	.....	Aug. 31, 27	7,000	48½	49	†47¼	37¼	— 1¼
190	132	223	172	81,000,000	100	Prairie Pipe Line	$3.50Q	July 31, 28	4,500	192	194¾	188	191	— 2
201¾	175½	186	167	4,000,000	100	Solar Refining	$5S.A.	June 20, 28	100	177	178	177	178	+ 1
27¼	15¼	35⅞	12	5,000,000	50	Southern Pipe Line	$2	Dec. 1, 27	300	14	14	13⅛	13¼	+ 1¼
41¾	35	53	36¾	20,000,000	25	South Penn Oil	50cQ	Mar. 31, 28	2,800	45	49⅛	45	47	+ 2
83	55½	100¾	70	3.500,000	100	South West Pa. Pipe Lines	‡$1Q	July 2, 28	100	83	83	82¼	82¼	— 9¾
81½	64¾	83⅝	70¼	230,788,513	25	S. O. Indiana	‡62½cQ	June 15, 28	16,500	77	78	75⅝	76	— 1¼
20⅞	14⅜	27¾	15	8.000.000	25	S. O. Kansas	.....	June 16, 24	700	24	24	22	22	— 2
130	111½	136½	122¼	17,103.011	25	S. O. Kentucky	$1Q	June 30, 28	1,100	129	129⅞	128	128	— 1
49½	40	45⅞	39⅜	4,601,100	25	S. O. Nebraska	62cQ	June 20, 28	4,900	43¾	45½	41½	43¼	+ 1½
87½	72	79½	71	14.000.000	25	S. O. Ohio	62½cQ	Apr. 2, 28	500	73⅞	74¼	73½	73½	0
122	117¼	125	117	7,000,000	100	do pfd	$1.75Q	June 1, 28	.....	.....	.....	.....	.....	.....
21	14½	26	16	30,844,000	25	Swan Finch Co	30cQ	June 30, 28	450	22½	22½	22	22	— ½
.....	.....	87⅛	72	124,941,600	25	Vacuum Oil	75cQ	June 20, 28	8,600	79⅞	81⅝	76½	78	— 3¼

*New high †New ow xEx dividend ‡Also extras.

New York Bonds

Week Ending Aug. 11

	High	Low	Last	Ch'ge
Assoc. Oil gold 6s	102¾	102⅝	102⅝	+ ⅛
Atlantic Refg. deb. 5s	101	100¾	100¾	— ⅜
Barnsdall Corp. 6s	102¼	101	101⅜	0
Barnsdall Corp. 8s ex war.	91¼	90½	90¾	— ½
Cal. Pet. 5s	98⅞	98½	98½	— ¼
Cal. Pet. 5½s	101¼	101¼	101¼	— ⅝
General Asphalt 6s	108⅜	107¼	108⅜	+ ⅞
General Petroleum 5s	102½	102⅜	102⅜	+ ⅜
Humble Oil & Refg. 5½s	102½	101	101⅜	+ ⅛
Humble Oil & Refg. 5s	99⅜	99½	99½	— ¼
Mid. Cont. Pet. 6½s	105¼	105	105¼	+ ¼
Pan Amer. P & T 7s	104¾	104½	104¾	— ¼
Pan Amer. P & T 6s	102¾	102½	102¾	0
Pan Amer. P & T 6s	95½	94¾	94¾	— ¼
Pure Oil 5½s	99⅜	90¾	98½	+ ⅛
Shell Union Oil 5s	96¾	96¼	96⅜	— ⅛
Simms Pet. 6s	102¼	101½	101½	+ ½
Sinclair Con. Oil 7s	102½	101½	102	+ ¼
Sinclair Con. Oil 6½s	99⅜	98⅜	98⅜	0
Sinclair Con. Oil 6s D	99¼	98⅞	99	0
Sinclair Con. Crude 5½s	97⅜	97	97	— ½
Sinclair Pipeline 5s	94	93½	93½	— ½
Skelly Oil 5½s	92	92	92	0
S. O. N. Y. 4½s	95	94½	94⅝	— ⅛
S. O. N. J. deb. 5s	102¾	101½	102½	— ⅛
Union Oil of Calif. 6s A	110⅛	109	109	— ½
Union Oil of Calif. 5s C	98½	98	98½	0

New York Curb Bonds

Week Ending Aug. 10

	High	Low	Last	Ch'ge
Beacon Oil 6s '36	101½	100	100	—1
Cities Serv. 5s '66	95½	95	95½	+ ⅛
Cities Serv. 6s '66	104	103⅝	103⅝	— ⅛
Cities Serv. G 5½s '42	94⅜	93¾	93¾	— ½
Cont. Oil 5¼s '37	96⅛	95⅞	95⅞	— ⅛
Empire O & R 5½s '42	93¼	92½	92¾	— ¼
Galena Oil 7s '30	100⅞	100½	100¾	+ ½
Gulf Oil 5s '37	100	99¾	100	+ ¼
Gulf Oil 5s '47	100	99¾	100	+ ¼
Independent Oil 6s '39	101	100⅝	101	+ ½
Richfield Oil 5½s	99⅝	99⅝	99⅝	0
Richfield Oil 6s '41	139	136	138	+3
Sun Oil 5½s '39	101¼	101¼	101¼	+ ¼
Trans. Cont. Oil 7s '30	105¾	105⅝	105⅝	0
Warner Quinlan 6s '42	109	107	107	0

Independent Oils on New York Curb

1927 High	1927 Low	1928 High	1928 Low	Par Value	Stocks	Transactions Week Ended Aug. 11 Sales	First	High	Low	Last	Change
2⅛	.55	1½	.65	$ 5	Amer. Con. Oilfields	1,600	71	83	74	75	+ 5
7½	2¾	6⅝	3⅛	N.P.	Amer. Maracaibo	1,800	4⅝	4⅞	4	4⅛	— ⅜
2¾	1	4	2¼	$ 10	Argo Oil	100	2½	2½	2½	2½	0
9¾	6¾	10¼	7⅝	10	Arkansas Nat. Gas	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	Beacon Oil	.....	.....	.....	.....	.....	.....
40	20½	40½	32¾	N.P.	British American	200	38	38	38	38	0
28¼	15½	23⅞	16¼	25c	Carib Syndicate N	3,100	15⅛	15⅛	14	14	— 1⅜
.....	.....	.....	.....	.....	do ctfs. of dep	.....	.....	.....	.....	.....	.....
58¾	40¼	71¼	54	$ 20	Cities Service	11,500	65¼	65⅞	65	65⅜	— ⅛
95⅜	87	103½	94½	100	do pfd	600	99	99⅜	99	99	— ⅜
8⅞	7⅜	9⅝	8⅞	10	do pfd. B	200	9⅜	9⅜	9⅜	9⅜	0
29¼	22½	34⅝	28¼	10	do banker's shares	.....	.....	.....	.....	.....	.....
3⅞	1⅜	2¼	1⅛	1	Colombia Syndicate	6,000	1⅜	1⅞	1¼	1⅛	+ 1/16
9¾	6⅜	8⅛	6⅜	10	Consolidated Royal	400	6½	6½	6½	6½	+ ⅛
14⅞	9½	17½	10	N.P.	Creole Syndicate	22,500	13⅛	13⅛	11⅞	12⅛	— 1
3	.50	3¼	.76	N.P.	Crown Central	400	1⅝	1⅝	1⅝	1⅝	+ 1/16
12	4	30⅛	8⅛	N.P.	Darby Petroleum	2,400	21⅝	22½	20½	20½	— 1⅝
11½	4	13½	7⅞	....	do trust ctfs	.....	.....	.....	.....	.....	.....
2½	.74	22	1	N.P.	Derby Oil & Refining	.....	.....	.....	.....	.....	.....
16¾	4	13	7½	N.P.	do pfd	500	13	15½	14⅝	15½	+ 2½
3¾	1	2	1	N.P.	Gibson Oil	.....	.....	.....	.....	.....	.....
2	.40	.53	.15	N.P.	Gilliland ctfs	.....	.....	.....	.....	.....	.....
118	86¼	148½	101⅛	$ 25	Gulf Oil Corp	4,900	129	129¼	123⅝	123⅝	— 4¾
2½	.80	7⅞	1	10	Intercontinent Pet	1,300	1	1⅛	1	1⅛	0
2¼	1⅛	3	1¼	N.P.	Kirby Petroleum	300	1⅜	1⅜	1¼	1¼	— ⅛
10⅞	5⅛	9⅜	5½	N.P.	Leonard Oil & Dev.	800	6½	6½	6¼	6¼	— ⅛
27½	20	32⅜	20	N.P.	Lion Oil & Refg	.....	.....	.....	.....	.....	.....
59⅜	37	57	48⅝	$ 25	Lone Star Gas	800	51⅞	52	51⅝	51¾	— ⅝
2⅞	.80	1⅞	.85	1	Magdalena Synd	1,900	90	95	†85	85	— 5
21½	20⅞	22⅜	22⅛	N.P.	Manhattan Oil	.....	.....	.....	.....	.....	.....
52	12	45	36½	N.P.	Margay Oil	200	37⅛	38	37⅛	37⅛	+ ⅛
3	1⅛	40½	40½	$ 10	Mexican-Panuco	.....	.....	.....	.....	.....	.....
12⅜	5	8	4	N.P.	Mexico-Ohio Oil	600	4¼	4¾	4¼	4¾	+ ⅛
1½	1	1½	.76	$ 1	Mountain & Gulf	1,800	82	85	81	81	0
29¼	22¾	28⅝	22⅜	10	Mountain Producers	7,100	23½	23⅝	23	23¼	0
5⅞	4⅝	5⅝	4⅜	5	New Bradford	.....	.....	.....	.....	.....	.....
6¼	4	5½	3⅝	10	New England Fuel	200	3¾	3¾	3¾	3¾	+ ⅛
16	9¼	11⅜	7⅛	1	New Mex. & Ariz	1,500	8¾	8⅞	8	8	— ⅛
13⅞	9	15½	11½	25	New York Oil	.....	.....	.....	.....	.....	.....
12¾	9½	13¼	10¾	N.P.	North Cent. Texas	2,400	11⅞	11⅞	11½	11¾	+ ¼
23⅞	21¼	....	....	....	Okla. Nat. Gas ctfs.	.....	.....	.....	.....	.....	.....
9⅜	3¼	6	2¼	N.P.	Pandem	4,700	2⅝	3½	2½	3½	+ 1
12⅛	7	15⅝	8½	N.P.	Panapec Oil	13,400	13⅞	13⅞	12½	12⅞	— 1
9	7⅝	16¼	10⅝	$ 25	Paragon Refg	100	16¼	*16¼	16¼	16¼	+ 1¼
.37	.25	9	4	N.P.	Peer Oil Corp	.....	.....	.....	.....	.....	.....
13½	5⅛	7¾	5¼	10	Pennok Oil	1,100	5¾	5½	5⅛	5⅛	— ⅜
....	....	4⅛	3⅜	5	Pittsburgh Oil & Gas	.....	.....	.....	.....	.....	.....
24⅜	7	14½	8	25	Red Bank Oil	.....	.....	.....	.....	.....	.....
15½	3½	13	4⅛	N.P.	Reiter-Foster	87,100	7¾	*13	7⅞	13	+ 5
28⅜	15	31½	18	$ 25	Richfield Oil pfd	500	18	18½	†18	18½	0
7	4½	9⅞	4⅝	N.P.	Ryan Consolidated	.....	.....	.....	.....	.....	.....
8	5¼	7¼	5¾	$ 10	Salt Creek Cons	1,200	6	6¼	5⅞	6¼	0
35½	27¼	35	27	10	Salt Creek Prod	2,400	28	28⅜	27⅝	27⅝	— ⅛
7	1¼	3½	1	5	Savoy Oil	200	1¾	2	1¾	2	+ ⅛
26½	17	22⅞	13	10	Tidal Osage	1,400	19½	20	18½	18½	— 1
23¾	15	21¼	13⅛	10	do non-voting	1,900	18¾	19	16½	16½	— 2⅛
92	63½	87	75	100	Transcontinental pfd	.....	.....	.....	.....	.....	.....
23¼	7	50	18	10	Venezuela-Mexico	.....	.....	.....	.....	.....	.....
7⅜	4¼	6⅝	4⅞	5	Venezuelan Petrol	1,200	5⅛	5⅛	5	5	— ⅛
32⅝	19½	25	17½	N.P.	Wilcox Oil & Gas	.....	.....	.....	.....	.....	.....
8	4¾	8¼	5⅜	$ 1	Woodley Petroleum	100	5⅞	5⅞	5⅞	5⅞	0
6	1¾	8⅜	2⅛	25	Y Oil & Gas (new)	200	6⅜	6⅜	5⅛	5⅛	+ ¼

*New High †New Low xEx Dividend

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